Inland Counties Emergency Medical Agency

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Serving San Bernardino, Inyo, and Mono Counties
Tom Lynch, EMS Administrator
Reza Vaezazizi, MD, Medical Director

DATE: April 15, 2019

TO: EMS Providers - ALS, LALS, BLS, EMS Aircraft
Hospital CEOs, ED Directors, Nurse Managers and PLNs
EMS Training Institutions and Continuing Education Providers
Inyo, Mono and San Bernardino County EMCC Members
Medical Advisory Committee (MAC) Members
Systems Advisory Committee (SAC) Members

FROM: Tom Lynch, EMS Administrator; Reza Vaezazizi, MD, Medical Director

SUBJECT: IMPLEMENTATION OF POLICIES/PROTOCOLS EFFECTIVE JULY 15, 2019

The policies/protocols listed below will be effective July 15, 2019. EMS providers may implement the below listed policies/protocols any time after April 15, 2019, provided the appropriate equipment and training has been obtained and completed. The final implementation date will be July 15, 2019, after which all EMS providers must comply with these policies/protocols.

ICEMA Reference Number and Name

6090	Fireline Paramedic
6110	Tactical Medicine Program
6140	Smoke Inhalation/CO Exposure/Suspected Cyanide Toxicity (DELETE)
7010	BLS/LALS/ALS Standard Drug and Equipment List
7020	EMS Aircraft Standard Drug and Equipment List
7030	Controlled Substance Policy
7040	Medication - Standard Orders
10190	Procedure - Standard Orders
11010	Respiratory Emergencies - Adult
11080	Altered Level of Consciousness/Seizures - Adult
11090	Shock (Non-Traumatic)
11100	Burn - Adult
11140	Pain Management (NEW)
11150	Smoke Inhalation/CO Exposure/Suspected Cyanide Toxicity (NEW)
14020	Airway Obstruction - Pediatric
14040	Cardiac Arrest - Pediatric
14050	Altered Level of Consciousness - Pediatric
14060	Seizure - Pediatric
15010	Trauma - Adult
15020	Trauma - Pediatric

Please insert and replace the attached policies/protocols and the Table of Contents in the EMS Policy, Procedure and Protocol Manual with the updated documents and ensure every station or facility has a reference copy. The ICEMA policies and protocols can also be found on ICEMA's website at www.ICEMA.net under the EMS Policy, Procedure and Protocol Manual section.

If you have any questions, please contact Suzee Kolodzik, EMS Specialist, at (909) 388-5820 or via e-mail at susan.kolodzik@cao.sbcounty.gov.

TL/RV/SK/jlm

Enclosures

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POLICIES/PROTOCOLS CHANGES EFFECTIVE JULY 15, 2019

Reference #	Name	Changes
DELETIONS		
6140	Smoke Inhalation/CO Exposure/Suspected Cyanide Toxicity	Delete as specialty program; add as a standard protocol.
NEW		
11140	Pain Management	New protocol for pain management.
11150	Smoke Inhalation/CO Exposure/Suspected Cyanide Toxicity	Delete as specialty program; add as a standard protocol. Removal of the use of Cyanokit (Hydroxocobalamin).
1000 ACCREDITATION AND CERTIFICATION		
None		
2000 DATA COLLECTION		
None		
3000 EDUCATION		
None		
4000 QUALITY IMPROVEMENT		
None		
5000 MISCELLANEOUS SYSTEM POLICIES		
None		
6000 SPECIALTY PROGRAM/ PROVIDER POLICIES		
6090	Fireline Paramedic	Addition of Ketamine and Tranexamic Acid.
6110	Tactical Medicine Program	Addition of Ketamine and Tranexamic Acid.
7000 STANDARD DRUG & EQUIPMENT LISTS		
7010	BLS/LALS/ALS Standard Drug and Equipment List	Addition of one (1) preload Epinephrine. Addition of Ketamine. Removal of Pediatric King airway equipment.
7020	EMS Aircraft Standard Drug and Equipment List	Addition of one (1) preload Epinephrine. Addition of Ketamine. Removal of Pediatric King Airway equipment.
7030	Controlled Substance Policy	Addition of Ketamine.
7040	Medication - Standard Orders	Addition of Push Dose Epinephrine. Addition of Ketamine. Removal of Lidocaine with King airway in pediatrics.

POLICIES/PROTOCOLS CHANGES EFFECTIVE JULY 15, 2019

Reference #	Name	Changes
8000 TRANSPORT/TRANSFERS AND DESTINATION POLICIES		
None		
9000 GENERAL PATIENT CARE POLICIES		
None		
10000 SKILLS		
10190	Procedure - Standard Orders	Removal of King Airway for pediatrics.
11000 ADULT EMERGENCIES		
11010	Respiratory Emergencies - Adult	Addition of Push Dose Epinephrine. Removed term “shock,” replaced with “reaction”.
11080	Altered Level of Consciousness/Seizures - Adult	Addition of consideration of CO poisoning.
11090	Shock (Non-Traumatic)	Addition of Push Dose Epinephrine. Removed 150 ml per hour, replaced with TKO.
11100	Burn - Adult	Reference to #11140 - Pain Management protocol.
12000 END OF LIFE CARE		
None		
13000 ENVIRONMENTAL EMERGENCIES		
None		
14000 PEDIATRIC EMERGENCIES		
14020	Airway Obstruction - Pediatric	Removal of King Airway for pediatrics.
14040	Cardiac Arrest - Pediatric	Addition of Push Dose Epinephrine. Addition of upload to ePCR. Removal of King Airway for pediatrics.
14050	Altered Level of Consciousness - Pediatric	Removal of advanced airway for pediatrics in LALS.
14060	Seizure - Pediatric	Removal of advanced airway for pediatrics in LALS.
15000 TRAUMA		
15010	Trauma - Adult	Reference to #11140 - Pain Management protocol.
15020	Trauma - Pediatric	Removal of advanced airway for pediatrics in LALS.

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FIRELINE PARAMEDIC

I. PURPOSE

To provide guidance and medical oversight for an ICEMA paramedic (EMT-P) deployed to function as a fireline paramedic (FEMP).

This protocol is for use by authorized FEMPs during fire suppression activities and treatment of fire suppression personnel only.

II. REQUIREMENTS

- Must be a currently licensed paramedic in California.
- Must be currently accredited paramedic in the ICEMA region.
- Must be currently employed by an ICEMA approved ALS provider.
- The FEMP will follow FIRESCOPE FEMP ICS 223-11 Position Manual and all other ICS protocols.
- The FEMP will check in and obtain briefing from the Logistics Section Chief or the Medical Unit Leader, if established. Briefing will include current incident situation, anticipated medical needs, and local emergency medical system orientation.
- The FEMP will provide emergency medical treatment to personnel operating on the fireline.
- The FEMP will follow ICEMA prior to contact protocols if unable to contact the assigned base station.
- The FEMP may not perform skills outside of the ICEMA scope of practice.

III. PROCEDURE

- The EMS provider will notify ICEMA of the deployment of the FEMP to an incident. Use the Fireline Paramedic (FEMP) Deployment Notification form, which is on the ICEMA website at ICEMA.net.
- The FEMP will carry inventory in the advanced life support (ALS) pack as per the below inventory list (see Section IV. Fireline EMT-P (ALS) Pack

Inventory. Inventory will be supplied and maintained by the employing provider agency. Additional items for restock should also be maintained and secured in a vehicle or in the Medical Unit trailer.

- Incident Medical Units may not have the capability of resupplying controlled substances (narcotics). Providers should stock sufficient quantities of medical supplies and medications, especially controlled substance medications, to assure adequate supplies and medications.

- Narcotics must be under double lock and maintained on the FEMP person or secured in his/her vehicle at all times as per the ICEMA Drug and Equipment List.

- FEMP may carry an inventory of controlled substances (i.e., Fentanyl, Ketamine and Midazolam) if authorized by the employing agency's Medical Director. The authorizing Medical Director is responsible to assure full compliance with all federal and state laws relating to purchase, storage and transportation of controlled substances. Only controlled substances approved for use in the ICEMA region may be carried and their use must be in accordance with current ICEMA patient care protocols.

- Radio communication failure protocols will not be used. Prior to base contact protocols will be followed. If further treatment is needed, radio contact with the base hospital should be established as soon as possible.

- Documentation of patient care must follow ICEMA protocol utilizing the ePCR, if available, or a paper O1A form. All patient care records will be reviewed by the provider agency and ICEMA for QI purposes.

- A FEMP will be paired with a fireline EMT (FEMT) or another FEMP who will assist with basic life support (BLS) treatment and supplies.

IV. FIRELINE EMT-P (ALS) PACK INVENTORY

***Minimum Requirements**: The weight of the pack will dictate if the EMT-P chooses to carry additional ALS supplies.*

MEDICATIONS/SOLUTIONS

Medications/Solutions	ALS
Albuterol Solution 2.5 mg Handheld Nebulizer or Multidose Inhaler	4
Atropine Sulfate 1 mg	2
Ipratropium Bromide Solution 0.5 mg Handheld Nebulizer or Multidose Inhaler	4

Medications/Solutions	ALS
Lidocaine 100 mg IV pre-load	2
Aspirin 80 mg chewable	1 bottle
Dextrose 10%/250 ml (D10W 25 gm) IV/IO Bolus	1
Diphenhydramine 50 mg	4
Epinephrine 1: 10,000 1 mg	2
Epinephrine 1: 1000 1 mg	4
Glucagon 1 mg	1
Nitroglycerin - Spray 0.4 metered dose and/or tablets (tablets to be discarded 90 days after opening)	1 (equivalent of 10 patient doses)
Saline 0.9% IV 1000 ml may be divided in two 500 ml bags or four 250 ml bags.	
Tranexamic Acid (TXA) 1 gm	1

CONTROLLED SUBSTANCE MEDICATIONS

Controlled Substance Medications MUST BE DOUBLED LOCKED	ALS
Midazolam	20 mg
Fentanyl (amount determined by the medical director)	200 - 400 mcg
Ketamine	120 - 500 mg

ALS AIRWAY EQUIPMENT

Airway Equipment	ALS
Endotracheal Tubes - 6.0, 7.0 and/or 7.5 cuffed with stylet	1 each
Laryngeal blades - #0, #1, #2, #3, #4 curved and/or straight	1 each
Laryngoscope handle with batteries - or 2 disposable handles	1 each
King Airway - Size 3, 4, and 5	1 each
ET Tube holder	1
End Tidal CO2 Detector	1
Needle Cricothyrotomy Kit	1
Needle Thoracostomy Kit	1

IV/MEDICATION ADMINISTRATION SUPPLIES

IV/Medication Administration Supplies	ALS
IV administration set macro drip	2
Venaguard	2
Alcohol preps	6
Betadine swabs	4
Tourniquet	2
Razor	1
Tape	1
IV catheters - 14, 16, 18 and 20 gauge	2
10cc syringe	2
1 cc TB syringe	2
18 gauge needle	4
25 gauge needle	2

MISCELLANEOUS EQUIPMENT

Miscellaneous	ALS
Sharps container	1
Narcotic storage per protocol	
FEMP pack inventory sheet	1
Patient care record or ePCR (Toughbook)	
AMA forms	3

Equipment	ALS
Compact AED or compact monitor defibrillator combination	
Appropriate cardiac pads	
Pulse oximetry (optional)	
Glucometer, test strips and lancets	4

The BLS pack and supplies will be carried by the FEMT or accompanying FEMP. Personal items and supplies cannot be carried in either the ALS pack or the BLS pack.

TACTICAL MEDICINE PROGRAM

I. PURPOSE

To provide medical oversight and continuous quality improvement and establish policies and procedures for EMS personnel assigned to Tactical Medicine Programs within the ICEMA region.

II. POLICY

- Tactical Medicine Programs shall be developed and utilized in accordance with the "California POST/EMSA Tactical Medicine Operational Programs and Standardized Training Recommendations" document that can be located on the EMSA website at emsa.ca.gov.

- Tactical Medicine Programs and their medical personnel (Emergency Medical Technicians (EMTs), Advanced EMT (AEMTs), Paramedics (EMT-Ps), and Registered Nurses (RNs)) shall be integrated into the local EMS system, in coordination with ICEMA, the local Emergency Medical Services (EMS) Agency (POST, 2010).

- Tactical medicine programs shall be reviewed and approved by ICEMA.

- Administration of this policy applies to EMTs, AEMTs, EMT-Ps, and RNs providing medical services within an established EMS Agency and as part of a recognized Tactical Medical Program.

  - The medical scope of practice for EMTs, AEMTs and EMT-Ps is consistent with Title 22, Division 9 and all ICEMA protocols.

- Tactical Medicine Programs should designate a Tactical Medicine Program Director as defined within POST and EMSA guidelines.

- Tactical Medicine Programs should designate a physician as a Tactical Medicine Medial Director "to provide medical direction, continuous quality improvement, medical oversight, and act as a resource for medical contingency planning" (POST, 2010).

- Tactical Medicine Operational Programs should have components pertaining to planning, medical oversight, quality improvement and training as defined in *Tactical Medicine Operational Programs and Standardized Training Recommendations* (POST, 2010; Section 2.2.1-7).

- Tactical Medicine Programs should include tactical medical personnel in mission planning and risk assessment to ensure appropriate assets are available for the identified mission as defined in *Tactical Medicine Operational Programs and Standardized Training Recommendations* (POST, 2010; Section 2.2.2).

III. PROCEDURE

- All agencies that intend to provide a Tactical Medicine Program will:
  - Submit an original application indicating the type of program. The Specialty and Optional Scope Program Application is available on the ICEMA website at ICEMA.net.
  - Submit a copy of the proposed program to include all information as listed on the application.
  - Provide a list of all RNs, EMTs and EMT-Ps assigned to the Tactical Medicine Program.
  - Tactical medical personnel must be:
    - EMT-Ps must be California licensed and accredited by ICEMA.
    - EMTs and AEMTs must be California certified.
    - RNs must be licensed as a Registered Nurse in California and an approved Flight Nurse, MICN, or EMT-P within the ICEMA region.
  - Participate in ICEMA approved Continuous Quality Improvement process.

IV. TRAINING

Designated Tactical Emergency Medical Support (TEMS) personnel shall successfully complete all initial and ongoing recommended training provided by an approved tactical medicine training program as listed in the California POST/EMSA *Tactical Medicine Operational Programs and Standardized Training Recommendations* - March 2010 document.

V. DRUG AND EQUIPMENT LISTS

Equipment and supplies carried and utilized by Tactical Emergency Medical Support (TEMS) personnel shall be consistent with the items listed in the California POST/EMSA *Tactical Medicine Operational Programs and Standardized Training Recommendations* document. Equipment and supplies shall be based on the appropriate level of personnel utilized for the particular Tactical Medicine Program (TEMS BLS or TEMS ALS).

The Tactical Medicine Program standard list of drugs and equipment carried by TEMS BLS or TEMS ALS medical personnel must be reviewed and approved by ICEMA prior to issue or use by EMT or EMT-P personnel.

TACTICAL MEDICINE OPERATIONAL EQUIPMENT RECOMMENDATIONS

Medications	BLS	ALS
Albuterol 2.5 mg with Atrovent 0.5 mg MDI		1
Aspirin 81 mg		1 bottle
Atropine Sulfate 1 mg preload		1
Dextrose 50% 25 gm preload		1
Diphenhydramine 50 mg		2
Epinephrine (1:1000) 1 mg		2
Epinephrine (1:10,000)1 mg preload		2
Glucagon 1 mg		1
Naloxone 2 mg preload		2
Nerve Agent Antidote (DuoDote)		1
Nitroglycerine 0.4 metered dose or tablets (tablets to be discarded 90 days after opening)		1
Normal Saline 500 ml		2
Ondansetron 4 mg IV/IM/oral tabs		4
Tranexamic Acid (TXA) 1 gm		1

CONTROLLED SUBSTANCE MEDICATIONS

Controlled Substance Medications MUST BE DOUBLED LOCKED	BLS	ALS
Midazolam		20 mgs
Fentanyl		200 - 400 mcg
Ketamine		120 - 500 mg

AIRWAY EQUIPMENT

Airway Equipment	BLS	ALS
Chest seal and Flutter Valve		1
End Tidal CO2 (device may be integrated into bag)		1
Endotracheal Tubes - 6.0 and/or 6.5, 7.0 and/or 7.5, and 8.0 and/or 8.5 with stylet		1 each
ET Tube holder		1
King LTS-D Size 4 and 5	1 each if approved	1 each
Laryngoscope Kit		1
Nasopharyngeal Airways Adult	1 set	1 set
Needle Cricothyrotomy Device		1
Needle Thoracostomy Kit		1
Suction (hand held)	1	1
Ventilation Bag collapsible (BVM)	1	1

IV/MONITORING EQUIPMENT

IV/Needle/Syringes	BLS	ALS
AED (with waveform monitoring preferred)	1	1
AED Pads	1	1
Blood Pressure Cuff	1	1
IO Device and Needles		1
IV Needles 14-20 Gauge		1 of each
IV Start Kit		1
IV Tubing		1
Pulse Oximeter (optional)		1
Saline Flush		2
Saline Lock		2
Stethoscope	1	1
Syringes 3 cc, 5 cc, 10 cc		1 each

DRESSING AND SPLINTING

Dressing/Splints	BLS	ALS
CoTCCC - Recommended tourniquet system	1	1
Elastic compression dressing	1	1
Latex free gloves	1	1
N95 Mask	1	1
Occlusive dressing	1	1
Roller bandage	1	1
Splint - semi-ridged moldable	1	1
Sterile gauze pads	1	1
Tape	1	1
Trauma dressing	1	1
Trauma shears	1	1
Triangle bandage	1	1
Hemostatic impregnated gauze non-exothermic, i.e., Combat Gauze (optional)	2	2

MISCELLANEOUS EQUIPMENT

Miscellaneous Equipment	BLS	ALS
Litter	1	1
Patient care record	1	1
Personal protection equipment (PPE)	1	1
Triage tags	10	10
Tactical light	1	1
Eyeware	1	1
Rescue blanket	1	1
Self-heating blanket	1	1

SMOKE INHALATION/CO EXPOSURE/SUSPECTED CYANIDE TOXICITY
(Expanded Scope Specialty Program)

I. PURPOSE

To identify and treat smoke inhalation and suspected cyanide toxicity.

II. AUTHORITY

California Health and Safety Code, Sections 1797.172 and 1797.185

California Code of Regulations, Title 22, Division 9, Chapter 4

III. FIELD ASSESSMENT/TREATMENT INDICATORS

- Indicators
  - Exposure to fire and smoke particularly in an enclosed-space structure fires.
  - Hydrogen cyanide concentration measured in the air does not accurately correlate to patient's level of exposure and toxicity. Consider possibility of carbon monoxide (CO) and cyanide exposure/toxicity in any patient (or unprotected EMS field personnel) with smoke inhalation.
- Cyanide Toxicity
  - Initial signs and symptoms are non-specific and may include; headache, dizziness, nausea, vomiting, confusion, and syncope.
  - Worsening signs and symptoms may include; altered level of consciousness (ALOC), hypotension, shortness of breath, seizures, cardiac dysrhythmias, and cardiac arrest.
  - The "bitter almond" smell on the breath of a cyanide-poisoned patient is neither sensitive nor specific and should not be considered in making the assessment.
- Carbon Monoxide Poisoning
  - Initial signs and symptoms are non-specific and may include; flu like symptoms, dizziness, severe headache, nausea, sleepiness, weakness and disorientation.

- Worsening signs and symptoms may include; blurred vision, shortness of breath, and altered level of consciousness.

IV. ALS INTERVENTIONS

- Remove patient from exposure area.
- Administer 100% oxygen via non-rebreather mask.
- Monitor pulse oximetry (SpO_2) though values may be unreliable in patients suffering from smoke inhalation.
- Monitor Carboxyhemoglobin (SpCO) levels. (SpCO monitor is required for participation in this Specialty program.)
- IV access, consider fluid bolus of 300cc NS.
- Patients exhibiting signs and symptoms of cyanide toxicity which persist after treatment with 100% oxygen therapy should be treated rapidly with the Cyanokit.
  - Administer Hydroxocobalamin.
    - Dosage: 5 gm IV over 15 minutes. May repeat one (1) time with base hospital orders. Second dose given over 15 minutes to 2 hours depending on the response to the first dose.
    - Reconstitute: Place the vial in an upright position. Add 200 mL of 0.9% Sodium Chloride Injection (not included in the kit) to the vial using the transfer spike. Fill to the line.
    - Mix: The vial should be repeatedly inverted or rocked, not shaken, for at least 60 seconds prior to infusion.
    - Infuse Vial: Use vented intravenous tubing, hang and infuse over 15 minutes.
- Use BVM with airway adjuncts as needed. Consider advanced airway if indicated.
- Refer to ICEMA Reference #11010 - Adult Respiratory Emergencies, for treatment of bronchospasm as indicated by wheezing
- Ensure rapid transport to closest receiving emergency department. In patients with SpCO of > 25% (> 15% if pregnant) or signs and symptoms of worsening CO poisoning, consider transport to a hyperbaric facility.

- Hyperbaric Medicine
  - Arrowhead Regional Medical Center
  - Loma Linda University Medical Center
  - Redlands Community Hospital
  - St. Mary Regional Medical Center

V. REFERENCE

Number	Name
11010	Adult Respiratory Emergencies

BLS/LALS/ALS STANDARD DRUG AND EQUIPMENT LIST

Each ambulance and first responder unit shall be equipped with the following functional equipment and supplies. **This list represents mandatory items with minimum quantities** excluding narcotics, which must be kept within the range indicated. All expiration dates must be current. All packaging of drugs or equipment must be intact. No open products or torn packaging may be used.

All ALS (transport and non-transport) and BLS transport vehicles shall be inspected annually.

MEDICATIONS/SOLUTIONS

Exchanged Medications/Solutions	BLS	LALS	ALS Non-Transport	ALS Transport
Adenosine (Adenocard) 6 mg			1	1
Adenosine (Adenocard) 12 mg			2	2
Albuterol Aerosolized Solution (Proventil) - unit dose 2.5 mg		4 doses	4 doses	4 doses
Albuterol MDI with spacer		1 SPECIALTY PROGRAMS ONLY	1 SPECIALTY PROGRAMS ONLY	1 SPECIALTY PROGRAMS ONLY
Aspirin, chewable - 81 mg tablet		2	1 bottle	1 bottle
Atropine 1 mg preload			2	2
Calcium Chloride 1 gm preload			1	1
Dextrose 10% in 250 ml Water (D10W) *		2	2	2
Diphenhydramine (Benadryl) 50 mg			1	1
Epinephrine 1 mg/ml 1 mg		2	2	2
Epinephrine 0.1 mg/ml 1 mg preload			4	4
Glucagon 1 mg		1	1	1
Glucose paste	1 tube	1 tube	1 tube	1 tube
Ipratropium Bromide Inhalation Solution (Atrovent) unit dose 0.5 mg			4	4
Irrigating Saline and/or Sterile Water (1000 cc)	2	1	1	2
Lidocaine 100 mg			3	3
Lidocaine 2% Intravenous solution			1	1
Lidocaine 2% (Viscous) dose			1	1
Magnesium Sulfate 10 gm			1	1
Naloxone (Narcan) 2 mg preload	2	2	2	2
Nitroglycerine (NTG) - Spray 0.4 mg metered dose and/or tablets (tablets to be discarded 90 days after opening)		2	1	2
Normal Saline for Injection (10 cc)		2	2	2
Normal Saline 100 cc			1	2
Normal Saline 250 cc			1	1

Exchanged Medications/Solutions	BLS	LALS	ALS Non-Transport	ALS Transport
Normal Saline 500 ml and/or 1000 ml		2000 ml	3000 ml	6000 ml
Ondansetron (Zofran) 4 mg Oral Disintegrating Tablets (ODT)			4	4
Ondansetron (Zofran) 4 mg IM/ IV			4	4
Sodium Bicarbonate 50 mEq preload			2	2
Tranexamic Acid (TXA) 1 gm			2	2

Non-Exchange Controlled Substance Medications MUST BE DOUBLE LOCKED	BLS	LALS	ALS Non-Transport	ALS Transport
Fentanyl			200-400 mcg	200-400 mcg
Midazolam			20-40 mg	20-40 mg
Ketamine			120-500 mg	120-500 mg

AIRWAY/SUCTION EQUIPMENT

Exchanged Airway/Suction Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
CPAP circuits - all manufacture's available sizes	1 (if CPAP is carried)	1 (if CPAP is carried)	1 each	2 each
End-tidal CO2 device - Pediatric and Adult (may be integrated into bag)			1 each	1 each
Endotracheal Tubes cuffed - 6.0 and/or 6.5, 7.0 and/or 7.5 and 8.0 and/or 8.5 with stylet			2 each	2 each
ET Tube holders - adult		1 each	1 each	2 each
King LTS-D Adult: Size 3 (yellow) Size 4 (red) Size 5 (purple)	2 each SPECIALTY PROGRAMS ONLY	1 each	1 each	2 each
Mask - Adult & Pediatric non-rebreather oxygen mask	2 each	2 each	2 each	2 each
Mask - Infant Simple Mask	1	1	1	1
Nasal cannulas - pediatric and adult	2 each	2 each	2 each	2 each
Naso/Orogastric feeding tubes - 5fr or 6fr, and 8fr			1 each	1 each
Naso/Orogastric tubes - 10fr or 12fr, 14fr, 16fr or 18fr			1 each	1 each
Nasopharyngeal Airways - (infant, child, and adult)	1 each	1 each	1 each	1 each
Needle Cricothyrotomy Device - Pediatric and adult or Needles for procedure 10, 12, 14 and/or 16 gauge			1 each 2 each	1 each 2 each
One way flutter valve with adapter or equivalent			1	1
Oropharyngeal Airways - (infant, child, and adult)	1 each	1 each	1 each	1 each
Rigid tonsil tip suction	1		1	1
Small volume nebulizer with universal cuff adaptor		2	2	2
Suction Canister	1		1	1
Suction catheters - 6fr, 8fr or 10fr, 12fr or 14fr	1 each		1 each	1 each

Exchanged Airway/Suction Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Ventilation Bags -				
Infant 250 ml	1	1	1	1
Pediatric 500 ml (or equivalent)	1	1	1	1
Adult	1	1	1	1
Water soluble lubricating jelly		1	1	1

Non-Exchange Airway/Suction Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Ambulance oxygen source -10 L /min for 20 minutes	1			1
Flashlight/penlight	1	1	1	1
Laryngoscope blades - #0, #1, #2, #3, #4 curved and/or straight			1 each	1 each
Laryngoscope handle with batteries - or 2 disposable handles			1	1
Magill Forceps - Pediatric and Adult			1 each	1 each
Manual powered suction device		1		
Portable oxygen with regulator - 10 L /min for 20 minutes	1	1	1	1
Portable suction device (battery operated)	1		1	1
Pulse Oximetry device	(SEE OPTIONAL EQUIPMENT SECTION, PG. 5)	1	1	1
Stethoscope	1	1	1	1
Wall mount suction device	1 (BLS TRANSPORT ONLY)			1

IV/NEEDLES/SYRINGES/MONITORING EQUIPMENT

Exchanged IV/Needles/Syringes/Monitor Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Conductive medium or Pacer/Defibrillation pads			2 each	2 each
Disposable Tourniquets		2	2	2
ECG electrodes			20	20
EZ-IO Driver			1 each	1 each
EZ-IO Needles:				
25 mm			2 each	2 each
45 mm			1 each	1 each
Glucose monitoring device with compatible strips and OSHA approved single use lancets	1	1	1	1
3-way stopcock with extension tubing			2	2
IV Catheters - sizes 14, 16, 18, 20, 22, 24		2 each	2 each	2 each
Macrodrip Administration Set		3	3	3
Microdrip Administration Set (60 drops /cc)		1	1	2

Exchanged IV/Needles/Syringes/Monitor Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Mucosal Atomizer Device (MAD) for nasal administration of medication	2	2	2	4
Pressure Infusion Bag (disposable)		1	1	1
Razors		1	2	2
Safety Needles - 20 or 21gauge and 23 or 25 gauge	2 each	2 each	2 each	2 each
Saline Lock Large Bore Tubing Needleless		2	2	2
Sterile IV dressing		2	2	2
Syringes w/wo safety needles - 1 cc, 3 cc, 10 cc catheter tip		2 each		
Syringes w/wo safety needles - 1 cc, 3 cc, 10 cc, 20 cc, 60 cc catheter tip			2 each	2 each

Non-Exchange IV/Needles/Syringes/Monitor Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
12-lead ECG Monitor and Defibrillator with TCP and printout			1	1
Blood pressure cuff - large adult or thigh cuff, adult, child and infant (one of each size)	1	1	1	1
Capnography monitor and supplies, may be integrated in the cardiac monitor			1	1
Needle disposal system (OSHA approved)	1	1	1	1
Thermometer - Mercury Free with covers	1	1	1	1

OPTIONAL EQUIPMENT/MEDICATIONS

Non-Exchange Optional Equipment/Medications	BLS	LALS	ALS Non-Transport	ALS Transport
AED/defib pads - Adult (1), Pediatric (1)	1 each	1 each		
Ammonia Inhalants			2	2
Automatic CPR device (FDA approved)	1	1	1	1
Automatic transport ventilator (Specialty Program Only - ICEMA approved device)			1	1
Backboard padding	1	1	1	1
Buretrol			1	1
Chemistry profile tubes			3	3
CPAP - (must be capable of titrating pressure between 2 and 15 cm H_2O)	1 (optional)	1 (optional)	1	1
Nerve Agent Antidote Kit (NAAK) - DuoDote or Mark I	3	3	3	3
EMS Tourniquet	1		1	1
Gum Elastic intubation stylet			2	2
Hemostatic Dressings *	1	1	1	1
IO Needles - Manual, Adult and Pediatric, Optional		Pediatric sizes only or EZ-IO needles and	1 each	1 each

Non-Exchange Optional Equipment/Medications	BLS	LALS	ALS Non-Transport	ALS Transport
		drivers		
IV infusion pump			1	1
IV warming device		1	1	1
Manual IV Flow Rate Control Device			1	1
Manual powered suction device	1	1	1	1
Multi-lumen peripheral catheter			2	2
Needle Thoracostomy Kit (prepackaged)			2	2
Pulse Oximetry device	1			
Translaryngeal Jet Ventilation Device			1	1
Vacutainer			1	1

* Hemostatic Dressings

- Quick Clot, Z-Medica
  - Quick Clot, Combat Gauze LE
  - Quick Clot, EMS Rolled Gauze, 4x4 Dressing, TraumaPad
- Celox
  - Celox Gauze, Z-Fold Hemostatic Gauze
  - Celox Rapid, Hemostatic Z-Fold Gauze
- HemCon ChitoFlex Pro Dressing

Note:

- The above products are "packaged" in various forms (i.e., Z-fold, rolled gauze, trauma pads, 4"x4"pads) and are authorized provided they are comprised of the approved product.
- Hemostatic Celox Granules, or granules delivered in an applicator, are not authorized.

DRESSING MATERIALS/OTHER EQUIPMENT/SUPPLIES

Exchanged Dressing Materials/Other Equipment/Supplies	BLS	LALS	ALS Non-Transport	ALS Transport
Adhesive tape - 1 inch	2	2	2	2
Air occlusive dressing	1	1	1	1
Ankle and wrist restraints, soft ties acceptable	1		1	1
Antiseptic swabs/wipes	10	10	10	10
Bedpan or fracture pan Urinal	1 (BLS TRANSPORT UNITS ONLY 1 (BLS TRANSPORT UNITS ONLY			1 1
Cervical Collars - Rigid Pediatric and Adult all sizes or Cervical Collars - Adjustable Adult and Pediatric	2 each 2 each	2 each 2 each	2 each 2 each	2 each 2 each
Cold Packs	2	2	2	2
Emesis basin or disposable bags and covered waste container	1	1	1	1
Head immobilization device	2	2	2	2
OB Kit	1	1	1	1
Pneumatic or rigid splints capable of splinting all extremities	4	2	2	4
Provodine/Iodine swabs/wipes or antiseptic equivalent		4	10	10
Roller bandages - 4 inch	6	3	3	6
Sterile bandage compress or equivalent	6	2	2	6
Sterile gauze pads - 4x4 inch	4	4	4	4
Sterile sheet for Burns	2	2	2	2
Universal dressing 10x30 inches	2	2	2	2

Non-Exchange Dressing Materials/Other Equipment/Supplies	BLS	LALS	ALS Non-Transport	ALS Transport
800 MHz Radio		1	1	1
Ambulance gurney	1 (BLS TRANSPORT UNITS ONLY			1
Bandage shears	1	1	1	1
Blood Borne Pathogen Protective Equipment - (nonporous gloves, goggles face masks and gowns meeting OSHA Standards)	2	1	2	2
Pediatric Emergency Measuring Tape (Broselow, etc.)		1	1	1
Drinkable water in secured plastic container or equivalent	1 gallon			1 gallon
Long board with restraint straps	1	1	1	1
Pediatric immobilization board	1	1	1	1

Non-Exchange Dressing Materials/Other Equipment/Supplies	BLS	LALS	ALS Non-Transport	ALS Transport
Pillow, pillow case, sheets and blanket	1 set (BLS TRANSPORT UNITS ONLY			1 set
Short extrication device	1	1	1	1
Straps to secure patient to gurney	1 set (BLS TRANSPORT UNITS ONLY			1 set
Traction splint	1	1	1	1
Triage Tags - ICEMA approved	20	20	20	20

EMS AIRCRAFT STANDARD DRUG AND EQUIPMENT LIST

Each Aircraft shall be equipped with the following functional equipment and supplies. This list represents mandatory items with minimum quantities, to exclude narcotics, which must be kept within the range indicated. All expiration dates must be current. All packaging of drugs or equipment must be intact. No open products or torn packaging may be used.

MEDICATIONS/SOLUTIONS	AMOUNT
Adenosine (Adenocard) 6 mg	1
Adenosine (Adenocard) 12 mg	2
Albuterol Aerosolized Solution (Proventil) - unit dose 2.5 mg	3 doses
Aspirin, chewable - 81 mg tablet	1 bottle
Atropine 1 mg preload	2
Calcium Chloride 1 gm preload	1
Dextrose 10% in 250 ml Water (D10W) *	2
Diphenhydramine (Benadryl) 50 mg	1
Epinephrine 1 mg/ml 1 mg	2
Epinephrine 0.1 mg/ml 1mg preload	3
Glucagon 1 mg	1
Glucopaste	1 tube
Ipratropium Bromide Inhalation Solution (Atrovent) unit dose 0.5 mg	3
Lidocaine 100 mg	3
Lidocaine 2% Intravenous solution	1
Lidocaine 2% (Viscous)	1 dose
Magnesium Sulfate 10 gms	1
Naloxone (Narcan) 2 mg preload	2
Nitroglycerin (NTG) - Spray 0.4 mg metered dose and/or tablets (tablets to be discarded 90 days after opening.)	1
Normal Saline for Injection (10 cc)	2
Normal Saline 250 ml	1
Normal Saline 500 ml and/or 1000 ml	2000 ml
Ondansetron (Zofran) 4 mg Oral Disintegrating Tablets (ODT)	4
Ondansetron (Zofran) 4 mg IM/ IV	4
Sodium Bicarbonate 50 mEq preload	2
Tranexamic Acid (TXA) 1 gm	2

CONTROLLED SUBSTANCE MEDICATIONS-MUST BE DOUBLE LOCKED	AMOUNT
Fentanyl	200-400 mcg
Ketamine	120-500 mg
Midazolam	20-40 mg

AIRWAY/SUCTION EQUIPMENT	**AMOUNT**
Aircraft Oxygen source -10 L /min for 20 minutes	1
C-PAP circuits - all manufacture's available sizes	1 each
End-tidal CO2 device - pediatric and adult (may be integrated into bag)	1 each
Endotracheal Tubes cuffed - 6.0 and/or 6.5, 7.0 and/or 7.5 and 8.0 and/or 8.5 with stylet	2 each
ET Tube holders - adult	1 each
Flashlight/penlight	1
King LTS-D Adult: Size 3 (yellow) Size 4 (red) Size 5 (purple)	1 each
Laryngoscope handle with batteries - or 2 disposable handles	1
Laryngoscope blades - #0, #1, #2, #3, #4 curved and/or straight	1 each
Magill Forceps - Pediatric and Adult	1 each
Nasal Cannulas - infant, pediatric and adult	2 each
Naso/Orogastric tubes - 10fr or 12fr, 14fr, 16fr or 18fr	1 each
Naso/Orogastric feeding tubes - 5fr or 6fr, and 8fr	1 each
Nasopharyngeal Airways - infant, child, and adult	1 each
Needle Cricothyrotomy Device (Approved) - Pediatric and adult *or* Needles for procedure 10, 12, 14 and/or16 gauge	1 each 2 each
Non Re-Breather O_2 Mask - Pediatric and Adult, Infant Simple Mask	2 each
One way flutter valve with adapter or equivalent	1
Oropharyngeal Airways - infant, child, and adult	1 each
Portable Oxygen with regulator - 10 L /min for 20 minutes	1
Portable suction device (battery operated) *and/or* Wall mount suction device	1 each
Pulse Oximetry device	1
Small volume nebulizer with universal cuff adaptor	1
Stethoscope	1
Suction catheters - 6fr, 8fr or 10fr, 12fr or 14fr	1 each
Ventilation Bags - Infant 250 ml, Pediatric 500 ml and Adult 1 L	1 each
Water soluble lubricating jelly	1
Ridged tonsil tip suction	1

IV/NEEDLES/SYRINGES/MONITORING EQUIPMENT	**AMOUNT**
12-Lead ECG Monitor and Defibrillator with TCP and printout	1
800 MHz Radio	1
Blood pressure cuff - large adult or thigh cuff, adult, child and infant	1 set
Capnography monitor and supplies, may be integrated in the cardiac monitor	1
Conductive medium *or* Adult and Pediatric Pacer/Defibrillation pads	2 each
ECG - Pediatric and Adult	20 patches
EZ IO Needles and Driver 25 mm and 45 mm	2 each 1 each
3-way stopcock with extension tubing	2
IO Needles - Manual, Adult and Pediatric, Optional	1 each
IV Catheters - sizes 14, 16, 18, 20, 22, 24	2 each

IV/NEEDLES/SYRINGES/MONITORING EQUIPMENT	AMOUNT
Glucose monitoring device	1
Macrodrip Administration Set Microdrip Administration Set (60 drops/ml)	3 1
Mucosal Atomizer Device (MAD) for nasal administration of medication	4
Needle disposal system (OSHA approved)	1
Pressure infusion bag	1
Safety Needles - 20 or 21 gauge and 23 or 25 gauge	2 each
Saline Lock	2
Syringes w/wo safety needles - 1 ml, 3 ml, 10 ml, 20 ml	2 each
Syringe - 60 ml catheter tip	2
Thermometer - Mercury free with covers	1

DRESSING MATERIALS/OTHER EQUIPMENT SUPPLIES	AMOUNT
Adhesive tape - 1 inch	2
Air occlusive dressing	1
Aircraft stretcher or litter system with approved FAA straps that allows for Axial Spinal Immobilization	1
Ankle and wrist restraints, soft ties acceptable	1
Antiseptic swabs/wipes	
Bandage shears	1
Blanket or sheet	2
Blood Borne Pathogen Protective Equipment - (nonporous gloves, goggles face masks and gowns meeting OSHA Standards)	2
Cervical Collars - Rigid Pediatric & Adult all sizes *or* Cervical Collars - Adjustable Adult and Pediatric	1 each 1 each
Emesis basin or disposable bags and covered waste container	1
Head immobilization device	1
OB Kit	1
Pediatric Emergency Measuring Tape (Broselow, etc.)	1
Pneumatic or rigid splints capable of splinting all extremities	4
Provodine/Iodine swabs/wipes or antiseptic equivalent	
Roller bandages - 4 inch	3
Sterile bandage compress or equivalent	6
Sterile gauze pads - 4x4 inch	4
Sterile Sheet for Burns	2
Traction splint	1
Universal Dressing 10x30 inches	2

OPTIONAL EQUIPMENT/MEDICATIONS	Amount
Ammonia Inhalants	2
Automatic ventilator (Approved)	1
Backboard padding	1
BLS AED/defib pads	1
Chemistry profile tubes	3

OPTIONAL EQUIPMENT/MEDICATIONS	Amount
Nerve Agent Antidote Kit (NAAK) - DuoDote or Mark I	3
D5W in bag	1
Hemostatic Dressing *	1
IV infusion pump	1
IV warming device	1
Manual powered suction device	1
Medical Tourniquet	1
Needle Thoracostomy Kit (prepackaged)	2
Pediatric immobilization board	1
Translaryngeal Jet Ventilation Device	1
Vacutainer	1

* Hemostatic Dressings

- Quick Clot, Z-Medica
  - Quick Clot, Combat Gauze LE
  - Quick Clot, EMS Rolled Gauze, 4x4 Dressing, TraumaPad
- Celox
  - Celox Gauze, Z-Fold Hemostatic Gauze
  - Celox Rapid, Hemostatic Z-Fold Gauze
- HemCon ChitoFlex Pro Dressing

Note:

- The above products are "packaged" in various forms (i.e., Z-fold, rolled gauze, trauma pads, and 4"x4" pads) and are authorized provided they are comprised of the approved product.
- Hemostatic Celox Granules, or granules delivered in an applicator, are not authorized.

CONTROLLED SUBSTANCE POLICY

I. PURPOSE

To establish minimum requirements and accountability for ICEMA approved advanced life support (ALS) providers to procure, stock, transport, and use controlled substances in compliance with the Federal Controlled Substances Act.

II. POLICY

- ALS providers shall have a formal agreement with a qualified Medical Director, or a drug authorizing physician, who agrees to purchase controlled substances using the appropriate DEA registration number and forms. This physician will retain ownership, accountability and responsibility for these controlled substances at all times.

- ALS providers shall develop policies compliant with The Controlled Substances Act Title 21, United States Code (USC) and California Code of Regulations Title 22, Division 9, Chapter 4, Article 7, Section 100168. These policies must ensure that security mechanisms and procedures are established for controlled substances, including, but not limited to:

  - Controlled substance ordering and order tracking
  - Controlled substance receipt and accountability
  - Controlled substance master supply storage, security and documentation
  - Controlled substance labeling and tracking
  - Vehicle storage and security
  - Usage procedures and documentation
  - Reverse distribution
  - Disposal
  - Re-stocking

  Additionally, the policies must ensure that mechanisms for investigation and mitigation of suspected tampering or diversion are established, including, but not limited to:

  - Controlled substance testing
  - Discrepancy reporting
  - Tampering, theft and diversion prevention and detection
  - Usage audits

- The ALS provider's medical director, or drug authorizing physician, must be a physician licensed to practice medicine in the State of California and must apply and obtain a valid DEA registration number for the ALS provider they propose to purchase controlled substances for. If a physician has agreements with multiple ALS providers, separate DEA registration numbers are required for each individual EMS provider. Physicians should not use their personal DEA registration number that they use for their clinical practice.

III. PROCEDURE

All controlled substances shall:

- Be purchased and stored in tamper evident containers.
- Be stored in a secure and accountable manner.
- Be kept under a "double lock" system at all times.
- Be reconciled at a minimum every 24 hours or at any change of shift or change in personnel.

IV. REQUIRED DOCUMENTATION

- ALS providers must maintain a log of all purchased controlled substances for a period of no less than two (2) years.
- All controlled substance usage will be documented on all patient care records (PCR) or electronic patient care reports (ePCR).
- ALS provider's medical director must determine the manner by which unused and expired controlled substances are discarded. The practice must be in compliance with all applicable local, state, and federal regulations and the process should be clearly stated in the EMS provider's controlled substances policy.
- In the event of breakage of a narcotic container an incident report will be completed and the damage reported to the appropriate supervisor.
- Discrepancies in the narcotic count will be reported immediately to the appropriate supervisor and a written report must be submitted.

SAMPLE DAILY LOG

Provider Name: _____

Month: _____Year: ___

	DATE	DOUBLE LOCK IN PLACE?	KETAMINE	MIDAZOLAM 5MG	FENTANYL	DRUG ADMINISTERED - AMOUNT GIVEN/WASTED O1A # PATIENT NAME DATE/TIME MEDIC NAME	DUTY MEDIC	CAPTAIN OR SUPERVISOR
1		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
2		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
3		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
4		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
5		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
6		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
7		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
8		Yes / No	Amount ____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature

SAMPLE - Master Controlled Substance Inventory Log

Date/Time	Lot Number	Ketamine Quantity	Midazolam Quantity	Fentanyl Quantity	Outdated Destroyed	Action Inventory, Restock, Dispensed, Inventory Total	Signatures of Personnel I certify that we have counted and found correct all controlled substances listed.	
							Signature	Signature

MEDICATION - STANDARD ORDERS

Medications listed in this protocol may be used only for the purposes referenced by the associated ICEMA Treatment Protocol.

For Nerve Agent Antidote Kit (NAAK) or medications deployed with the ChemPack see Appendix I (Page 12).

Adenosine (Adenocard) - Adult (ALS)

Stable narrow-complex SVT or Wide complex tachycardia:

Adenosine, 6 mg rapid IVP followed immediately by 20 cc NS bolus, and Adenosine, 12 mg rapid IVP followed immediately by 20 cc NS bolus if patient does not convert. May repeat one (1) time.

Reference #s 7010, 7020, 11050

Albuterol (Proventil) Aerosolized Solution - Adult (LALS, ALS)

Albuterol, 2.5 mg nebulized, may repeat two (2) times.

Reference #s 6090, 7010, 7020, 11010, 11100

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Adult (LALS, ALS - Specialty Programs Only)

Albuterol MDI, four (4) puffs every ten (10) minutes for continued shortness of breath and wheezing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) - Pediatric (LALS, ALS)

Albuterol, 2.5 mg nebulized, may repeat two (2) times.

Reference #s 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Pediatric (LALS, ALS - Specialty Programs Only)

Albuterol MDI, four (4) puffs every ten (10) minutes for continued shortness of breath and wheezing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Aspirin, chewable (LALS, ALS)

Aspirin, 325 mg PO chewed (one (1) adult non-enteric coated aspirin) or four (4) chewable 81 mg aspirin.

Reference #s 2020, 6090, 6110, 7010, 7020, 11060

Atropine (ALS)

Atropine, 0.5 mg IV/IO. May repeat every five (5) minutes up to a maximum of 3 mg or 0.04 mg/kg.

Organophosphate poisoning:
Atropine, 2 mg IV/IO, repeat at 2 mg increments every five (5) minutes if patient remains symptomatic.

Reference #s 6090, 6110, 7010, 7020, 11040, 12020, 13010

Calcium Chloride (ALS)

Calcium Channel Blocker Poisonings:
Calcium Chloride, 1 gm (10 cc of a 10% solution) IV/IO, base hospital order only.

Reference #s 2020, 7010, 7020, 13010

Dextrose - Adult (LALS, ALS)

Hypoglycemia - Adult with blood glucose less than 80 mg/dL:
Dextrose 10% /250 ml (D10W 25 gm) IV/IO Bolus

Reference #s 2020, 6090, 6110, 7010, 7020, 8010, 11050, 11080, 13020, 13030

Dextrose - Pediatric (LALS, ALS)

Hypoglycemia - Neonates (0 - 4 weeks) with blood glucose less than 35 mg/dL or pediatric patients (more than 4 weeks) with glucose less than 60 mg/dL:
Dextrose 10%/250 ml (D10W 25 gm) 0.5 gm/kg (5 ml/kg) IV/IO

Reference #s 2020, 7010, 7020, 13020, 13030, 14040, 14050, 14060

Diphenhydramine - Adult (ALS)

Diphenhydramine, 25 mg IV/IO

Diphenhydramine, 50 mg IM

Reference #s 6090, 6110, 7010, 7020, 11010, 13010

Diphenhydramine - Pediatric (ALS)

Diphenhydramine, 1 mg/kg slow IV/IO, not to exceed adult dose of 25 mg, **or**

Diphenhydramine, 2 mg/kg IM not to exceed adult dose of 50 mg IM

Reference #s 7010, 7020, 14030

Epinephrine (1 mg/ml) - Adult (LALS, ALS)

Severe Bronchospasm, Asthma Attack, Pending Respiratory Failure, Severe Allergic Reactions:
Epinephrine, 0.3 mg IM. May repeat after fifteen (15) minutes one (1) time if symptoms do not improve.

Reference # 11010

Epinephrine (0.1 mg/ml) - Adult (ALS)

For persistent severe anaphylactic reaction:
Epinephrine (0.1 mg/ml), 0.1 mg slow IVP/IO. May repeat every five (5) minutes as needed to total dosage of 0.5 mg.

Reference # 11010

Cardiac Arrest, Asystole, PEA:
Epinephrine (0.1 mg/ml), 1 mg IV/IO. Repeat after every two (2) minute cycle of CPR.

Reference #s 2020, 6090, 6110, 7010, 7020, 11010, 11070, 12020

Epinephrine (0.01 mg/ml) - Adult (ALS)

For persistent profound shock and hypotension (Push Dose Epinephrine):

Prepare Epinephrine 0.01 mg/ml solution by mixing 9 ml of normal saline with 1 ml of Epinephrine 0.1 mg/ml in a 10 ml syringe. Administer 1 ml every one (1) to five (5) minutes titrated to maintain SBP more than 90 mm Hg.

Reference #s 2020, 6090, 6110, 7010, 7020, 7040, 11090

Epinephrine (1 mg/ml) - Pediatric (LALS, ALS)

Severe Bronchospasm, Asthma Attack, Pending Respiratory Failure, Severe Allergic Reactions:
Epinephrine, 0.01 mg/kg IM not to exceed adult dosage of 0.3 mg.

Reference #s 2020, 6090, 7010, 7020, 14010, 14030

Epinephrine (0.1 mg/ml) - Pediatric (ALS)

Anaphylactic reaction (no palpable radial pulse and depressed level of consciousness):

Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO, no more than 0.1 mg per dose. May repeat to a maximum of 0.5 mg.

Cardiac Arrest:

1 day to 8 years	Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO (do not exceed adult dosage)
9 to 14 years	Epinephrine (0.1mg/ml), 1.0 mg IV/IO

Newborn Care:

Epinephrine (0.1 mg/ml), 0.01mg/kg IV/IO if heart rate is less than 60 after one (1) minute after evaluating airway for hypoxia and assessing body temperature for hypothermia.

Epinephrine (0.1 mg/ml), 0.005 mg/kg IV/IO every ten (10) minutes for persistent hypotension as a base hospital order or in radio communication failure.

Reference # 14090

Epinephrine (0.01 mg/ml) - Pediatric (ALS)

Post resuscitation, with continued signs of profound shock and hypotension (Push Dose Epinephrine):

Prepare Epinephrine 0.01 mg/ml solution by mixing 9 ml of normal saline with 1 ml of Epinephrine 0.1 mg/ml in a 10 ml syringe. Administer 0.1ml/kg (do not exceed adult dosage), every one (1) to five (5) minutes. Titrate to maintain a SBP more than 70 mm Hg.

Reference #s 2020, 7010, 7020, 7040, 11090, 14040

Fentanyl - Adult (ALS)

Chest Pain (Presumed Ischemic Origin):

Fentanyl, 50 mcg slow IV/IO over one (1) minute. May repeat every five (5) minutes titrated to pain, not to exceed 200 mcg.

Fentanyl, 100 mcg IM/IN. May repeat 50 mcg every ten (10) minutes titrated to pain, not to exceed 200 mcg.

Acute traumatic injuries, acute abdominal/flank pain, burn injuries, Cancer pain, Sickle Cell Crisis:

Fentanyl, 50 mcg slow IV/IO push over one (1) minute. May repeat every five (5) minutes titrated to pain, not to exceed 200 mcg IV/IO, **or**

Fentanyl, 100 mcg IM/IN. May repeat 50 mcg every ten (10) minutes titrated to pain, not to exceed 200 mcg.

Pacing, synchronized cardioversion:

Fentanyl, 50 mcg slow IV/IO over one (1) minute. May repeat in five (5) minutes titrated to pain, not to exceed 200 mcg.

Fentanyl, 100 mcg IN. May repeat 50 mcg every ten (10) minutes titrated to pain, not to exceed 200 mcg.

Reference #s 2020, 6090, 6110, 7010, 7020, 7030, 10190, 11060, 11100, 11140, 13030, 15010

Fentanyl - Pediatric (ALS)

Fentanyl, 0.5 mcg/kg slow IV/IO over one (1) minute. May repeat in five (5) minutes titrated to pain, not to exceed 100 mcg.

Fentanyl, 1 mcg/kg IM/IN, may repeat every ten (10) minutes titrated to pain not to exceed 200 mcg.

Reference #s 2020, 6110, 7010, 7020, 7030, 11060, 13030, 14070, 15020

Glucose - Oral - Adult (BLS, LALS, ALS)

Adult with blood glucose less than 80 mg/dL:

Glucose - Oral, one (1) tube for patients with an intact gag reflex and hypoglycemia.

Reference #s 7010, 7020, 11080, 11090, 11110, 13020

Glucose - Oral - Pediatric (BLS, LALS, ALS)

Hypoglycemia - Neonates (0 - 4 weeks) with blood glucose less than 35 mg/dL or pediatric patients (more than 4 weeks) with glucose less than 60 mg/dL:

Glucose - Oral, one (1) tube for patients with an intact gag reflex and hypoglycemia.

Reference #s 7010, 7020, 14050, 14060

Glucagon - Adult (LALS, ALS)

Glucagon, 1 mg IM/SC/IN, if unable to establish IV. May administer one (1) time only.

Beta blocker Poisoning:

Glucagon, 1 mg IV/IO (base hospital order only)

Reference #s 6090, 6110, 7010, 7020, 11080, 13010, 13030

Glucagon - Pediatric (LALS, ALS)

Glucagon, 0.025 mg/kg IM/IN, if unable to start an IV. May be repeated one (1) time after twenty (20) minutes for a combined maximum dose of 1 mg.

Reference #s 7010, 7020, 13030, 14050, 14060

Ipratropium Bromide (Atrovent) Inhalation Solution use with Albuterol Adult (ALS)

Atrovent, 0.5 mg nebulized. Administer one (1) dose only.

Reference #s 7010, 7020, 11010, 11100

Ipratropium Bromide (Atrovent) Metered-Dose Inhaler (MDI) use with Albuterol Adult (ALS - Specialty Programs Only)

When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 6090, 6110, 7010, 7020, 11010, 11100

Ipratropium Bromide (Atrovent) Inhalation Solution use with Albuterol - Pediatric (ALS)

1 day to 12 months	Atrovent, 0.25 mg nebulized. Administer one (1) dose only.
1 year to 14 years	Atrovent, 0.5 mg nebulized. Administer one (1) dose only.

Reference #s 7010, 7020, 14010, 14030, 14070

Ipratropium Bromide (Atrovent) Metered-Dose Inhaler (MDI) use with Albuterol - Pediatric (ALS - Specialty Programs Only)

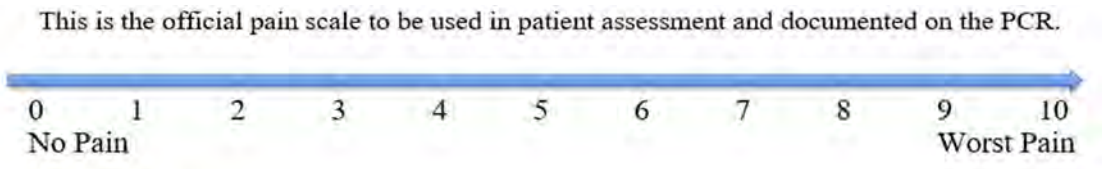
When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Ketamine - Adult (ALS)

Acute traumatic injury, acute abdominal/flank pain, burn injuries, cancer related pain and sickle cell crisis:

Ketamine, 0.3 mg/kg to a max of 30 mg in a 50 - 100 ml of NS via IV over five (5) minutes. May repeat one (1) time, after 15 minutes, if pain score remains at five (5) or higher. Do not administer IVP, IO, IM, or IN.



Reference #s 7010, 7020, 11140

Lidocaine - Adult (ALS)

Intubation, King Airway, NG/OG, for suspected increased intracranial pressure (ICP):
Lidocaine, 1.5 mg/kg IV/IO

VT (pulseless)/VF:
Initial Dose: Lidocaine, 1.5 mg/kg IV/IO

For refractory *VT (pulseless)/VF*, may administer an additional 0.75 mg/kg IV/IO, repeat one (1) time in five (5) to ten (10) minutes; maximum total dose of 3 mg/kg.

V-Tach, Wide Complex Tachycardia - with Pulses:
Lidocaine, 1.5 mg/kg slow IV/IO

May administer an additional 0.75 mg/kg slow IV/IO; maximum total dose of 3 mg/kg.
Reference #s 2020, 6090, 7010, 7020, 8010, 10190, 11050, 11070, 15010

Lidocaine - Pediatric (ALS)

NG/OG, for suspected increased intracranial pressure (ICP):
Lidocaine, 1.5 mg/kg IV/IO

Cardiac Arrest:

1 day to 8 years	Lidocaine, 1.0 mg/kg IV/IO
9 to 14 years	Lidocaine, 1.0 mg/kg IV/IO

May repeat Lidocaine at 0.5 mg/kg after five (5) minutes; maximum total dose of 3 mg/kg.

Reference #s 2020, 7010, 7020, 14040

Lidocaine 2% (Intravenous Solution) - Pediatric and Adult (ALS)

Pain associated with IO infusion:
Lidocaine, 0.5 mg/kg slow IO push over two (2) minutes, not to exceed 40 mg total.

Reference #s 2020, 7010, 7020, 10140, 10190

Lidocaine 2% Gel (Viscous) - Pediatric and Adult (ALS)

Pain associated with Nasogastric/Orogastric Tube insertion.

Reference # 10190

Magnesium Sulfate (ALS)

Polymorphic Ventricular Tachycardia:

Magnesium Sulfate, 2 gm IV/IO bolus over five (5) minutes for polymorphic VT if prolonged QT is observed during sinus rhythm post-cardioversion.

Eclampsia (Seizure/Tonic/Clonic Activity):

Magnesium Sulfate, 4 gm IV/IO slow IV push over three (3) to four (4) minutes.

Magnesium Sulfate, 10 mg/min IV/IO drip to prevent continued seizures.

Reference #s 2020, 7010, 7020, 8010, 14080

Midazolam (Versed) - Adult (ALS)

Behavioral Emergencies, with suspected excited delirium:

Midazolam, 5 mg IM/IN or IV/IO push. May repeat once for a total dosage of 10 mg.

Reference # 11130

Seizure:

Midazolam, 2.5 mg IV/IO/IN. May repeat in five (5) minutes for continued seizure activity, **or**

Midazolam, 5 mg IM. May repeat in ten (10) minutes for continued seizure activity.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity. Contact base hospital for additional orders and to discuss further treatment options.

Pacing, synchronized cardioversion:

Midazolam, 2 mg slow IV/IO push or IN

Reference #s 6090, 6110, 7010, 7020, 10190, 11080, 13020, 14080

Midazolam (Versed) - Pediatric (ALS)

Seizures:

Midazolam, 0.1 mg/kg IV/IO with maximum dose 2.5 mg. May repeat Midazolam in five (5) minutes, **or**

Midazolam, 0.2 mg/kg IM/IN with maximum dose of 5 mg. May repeat Midazolam in ten (10) minutes for continued seizure.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity. Contact base hospital for additional orders and to discuss further treatment options.

Reference #s 7010, 7020, 14060

Naloxone (Narcan) - Adult (BLS)

For resolution of respiratory depression related to suspected opiate overdose:

Naloxone, 0.5 mg IM/IN, may repeat Naloxone 0.5 mg IM/IN every two (2) to three (3) minutes if needed.

Do not exceed 10 mg of Naloxone total regardless of route administered.

Reference #s 7010, 7020, 8050 11080

Naloxone (Narcan) - Adult (LALS, ALS)

For resolution of respiratory depression related to suspected opiate overdose:

Naloxone, 0.5 mg IV/IO/IM/IN, may repeat Naloxone 0.5 mg IV/IO/IM/IN every two (2) to three (3) minutes if needed.

Do not exceed 10 mg of Naloxone total regardless of route administered.

Reference #s 6110, 7010, 7020, 11080

Naloxone (Narcan) - Pediatric (BLS)

For resolution of respiratory depression related to suspected opiate overdose:

1 day to 8 years	Naloxone, 0.1 mg/kg IM/IN (do not exceed the adult dose of 0.5 mg per administration)
9 to 14 years	Naloxone, 0.5 mg IM/IN

May repeat every two (2) to three (3) minutes if needed. Do not exceed the adult dosage of 10 mg total IM/IN.

Reference #s 7010, 7020, 8050, 14040, 14050

Naloxone (Narcan) - Pediatric (LALS, ALS)

For resolution of respiratory depression related to suspected opiate overdose:

1 day to 8 years	Naloxone, 0.1 mg/kg IV/IO/IM/IN (do not exceed the adult dose of 0.5 mg per administration)
9 to 14 years	Naloxone, 0.5 mg IV/IO/IM/IN

May repeat every two (2) to three (3) minutes if needed. Do not exceed the adult dosage of 10 mg total IV/IO/IM/IN.

Reference #s 7010, 7020, 14040, 14050

Nitroglycerin (NTG) (LALS, ALS)

Nitroglycerin, 0.4 mg sublingual/transmucosal.

One (1) every three (3) minutes as needed. May be repeated as long as patient continues to have signs of adequate tissue perfusion. **If a Right Ventricular Infarction is suspected, the use of nitrates requires base hospital contact.**

Nitroglycerin is contraindicated if there are signs of inadequate tissue perfusion or if sexual enhancement medications have been utilized within the past forty-eight (48) hours.

Reference #s 6090, 6110, 7010, 7020, 11010, 11060

Ondansetron (Zofran) - Patients four (4) years old to Adult (ALS)

Nausea/Vomiting:

Ondansetron, 4 mg slow IV/IO/ODT

All patients four (4) to eight (8) years old: May administer a total of 4 mgs of Ondansetron prior to base hospital contact.

All patients nine (9) and older: May administer Ondansetron 4 mg; may repeat two (2) times, at ten (10) minute intervals, for a total of 12 mgs prior to base hospital contact.

May be used as prophylactic treatment of nausea and vomiting associated with narcotic administration.

Reference #s 6110, 7010, 7020, 9120, 10100, 15010, 15020

Oxygen (non-intubated patient per appropriate delivery device)

General Administration (Hypoxia):

Titrate Oxygen at lowest rate required to maintain SPO_2 at 94%. Do not administer supplemental oxygen for SPO_2 more than 95%.

Chronic Obstructive Pulmonary Disease (COPD):

Titrate Oxygen at lowest rate required to maintain SPO_2 at 90%. Do not administer supplemental oxygen for SPO_2 more than 91%.

Reference #s 9010, 9120, 11010, 11020, 11040, 11050, 11060, 11080, 11090, 11100, 11150, 13010, 13020, 13030, 14010, 14020, 14030, 14050, 14060, 14070, 14080, 14090, 15010, 15020

Sodium Bicarbonate (ALS) (base hospital order only)

Tricyclic Poisoning:

Sodium Bicarbonate, 1 mEq/kg IV/IO

Reference #s 2020, 7010, 7020, 13010

Tranexamic Acid (TXA) - Patients 15 years of age and older (ALS)

Signs of hemorrhagic shock meeting inclusion criteria:

Administer TXA 1 gm in 50 - 100 ml of NS via IV/IO over ten (10) minutes. Do not administer IVP as this will cause hypotension.

Reference #s 7010, 7020, 15010

APPENDIX I

Medications for self-administration or with deployment of the ChemPack.

Medications listed below may be used only for the purposes referenced by the associated ICEMA Treatment Protocol. Any other use, route or dose other than those listed, must be ordered in consultation with the Base Hospital physician.

Atropine - Pediatric (BLS, AEMT-Auto-injector only with training, ALS)

Known nerve agent/organophosphate poisoning with deployment of the ChemPack using:

Two (2) or more mild symptoms: Administer the weight-based dose listed below as soon as an exposure is known or strongly suspected. If severe symptoms develop after the first dose, two (2) additional doses should be repeated in rapid succession ten (10) minutes after the first dose; do not administer more than three (3) doses. If profound anticholinergic effects occur in the absence of excessive bronchial secretions, further doses of atropine should be withheld.

One (1) or more severe symptoms: Immediately administer (3) three weight-based doses listed below in rapid succession.

Weight-based dosing:

Less than 6.8 kg (less than 15 lbs):	0.25 mg, IM using multi-dose vial
6.8 to 18 kg (15 to 40 lbs):	0.5 mg, IM using AtroPen auto-injector
18 to 41 kg (40 to 90 lbs):	1 mg, IM using AtroPen auto-injector
More than 41 kg (more than 90 lbs):	2 mg, IM using multi-dose vial

Symptoms of insecticide or nerve agent poisoning, as provided by manufacturer in the AtroPen product labeling, to guide therapy:

Mild symptoms: Blurred vision, bradycardia, breathing difficulties, chest tightness, coughing, drooling, miosis, muscular twitching, nausea, runny nose, salivation increased, stomach cramps, tachycardia, teary eyes, tremor, vomiting, or wheezing.

Severe symptoms: Breathing difficulties (severe), confused/strange behavior, defecation (involuntary), muscular twitching/generalized weakness (severe), respiratory secretions (severe), seizure, unconsciousness, urination (involuntary).

NOTE: Infants may become drowsy or unconscious with muscle floppiness as opposed to muscle twitching.

Reference #s 7040, 13010, 13040

Diazepam (Valium) - Adult (ALS)

For seizures associated with nerve agent/organophosphate exposure ONLY with the deployment of the ChemPack:

Diazepam 10 mg (5 mg/ml) auto-injector IM (if IV is unavailable), **or**
Diazepam 2.5 mg IV

Reference # 13040

Diazepam (Valium) - Pediatric (ALS)

For seizures associated with nerve agent/organophosphate exposure ONLY with the deployment of the ChemPack:

Diazepam 0.05 mg/kg IV

Reference # 13040

Nerve Agent Antidote Kit (NAAK)/Mark I or DuoDote (containing Atropine/Pralidoxime Chloride for self-administration or with deployment of the ChemPack) - Adult

Nerve agent exposure with associated symptoms:

One (1) NAAK auto-injector IM into outer thigh. May repeat up to two (2) times every ten (10) to fifteen (15) minutes if symptoms persist.

Reference #s 7010, 7020, 13010, 13040

PROCEDURE - STANDARD ORDERS

12-lead Electrocardiography (EMT-P)

- ECG should be performed prior to medication administration.
- ECG should be performed on any patient whose medical history and/or presenting symptoms are consistent with acute coronary syndrome including typical or atypical chest pain, syncopal episode, prior AMI, heart disease, or other associated risk factors.

Axial Spinal Immobilization (EMT, AEMT and EMT-P)

- Should be placed if patient meets the indicators, per ICEMA Reference #15010 - Trauma - Adult (Neuro Deficits present, Spinal Tenderness present, Altered Mental status, Intoxication, or Distracting Injury).
- An AEMT and/or EMT-P may remove if placed by BLS crew and it does not meet indicators.

Capnography (EMT-P)

- Utilize capnography in patients with respiratory distress, respiratory failure, cardiac arrest, and critically ill patients
- Perform capnography prior to pain medication administration.
- Perform capnography after administration of Midazolam for behavioral emergencies.
- Monitor waveform, numerical value and document in ePCR.

Continuous Positive Airway Pressure Device (CPAP) - Adult (EMT, AEMT and EMT-P)

- Start at lowest setting and increase slowly until patient experiences relief or until a maximum of 15 cm H_2O is reached.

External Jugular Vein Access (AEMT and EMT-P)

- Not indicated for patients eight (8) years of age and younger.
- Patient condition requires IV access and other peripheral venous access attempts are unsuccessful.

Blood Glucose Check (EMT, AEMT, and EMT-P)

- Should be assessed if the patient meets key indicators consistent with high or low blood sugar.

Intraosseous Insertion (AEMT pediatric patients only and EMT-P)

- EMT-Ps may administer Lidocaine slowly per ICEMA Reference #7040 - Medication - Standard Orders, to control infusion pain.
- Approved insertion sites:
  - Eight (8) years of age or younger (LALS and ALS):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
  - Nine (9) years of age and older (ALS only):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
    - Distal Tibia - Lower end of tibia, 2 cm above the medial malleolus.
    - Humeral Head (EZ IO only).
    - Anterior distal femur, 2 cm above the patella - Base hospital contact only.
- Leave site visible and monitor for extravasation.

King Airway Device (Perilaryngeal) - Adult (EMT Specialty Program, AEMT, and EMT-P)

- Use of King Airway device may be performed only on those patients who meet **all** of the following criteria:
  - Unresponsive, agonal respirations (less than six (6) breaths per minute) or apneic.
  - Patients 15 years or older.
  - Patients over four (4) feet in height.
- Additional considerations:
  - Medications may **not** be given via the King Airway device.
  - King Airway device should not be removed unless it becomes ineffective.

Nasogastric/Orogastric Tube (EMT-P)

- Use viscous Lidocaine gel per ICEMA Reference #7040 - Medication - Standard Orders, for conscious patients.
- Required for all full arrest patients.

Needle Cricothyrotomy (EMT-P)

- Absolute contraindication: Transection of the distal trachea.
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- Contact base hospital if unable to ventilate adequately and transport immediately to the closest hospital for airway management.

Needle Thoracostomy (EMT-P)

- In blunt chest trauma consider bilateral tension pneumothorax if pulse oximetry (SpO_2) reading remains low with a patent airway or with poor respiratory compliance.

Oral Endotracheal Intubation - Adult (EMT-P)

- Oral endotracheal intubation is permitted only in patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.
- For suspected head/brain injury immediately prior to intubation, consider Lidocaine prophylactically per ICEMA Reference #7040 - Medication - Standard Orders.
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- If unable to place ET after a maximum of three (3) intubation attempts (defined as placement of the laryngoscope in the mouth), then consider placing a King Airway device. If unsuccessful, continue with BLS airway management and transport to the nearest receiving hospital.
- Document verification of tube placement (auscultation, visualization, capnography).

Synchronized Cardioversion (EMT-P)

- For anxiety prior to cardioversion, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- If rhythm deteriorates to v-fib, turn off the sync button and defibrillate.
- Select initial energy level setting at 100 joules or a clinically equivalent biphasic energy level per manufacture guidelines. Procedure may be repeated at 200, 300 and 360 joules or a clinically equivalent biphasic energy level per manufacture guidelines.
- In radio communication failure or with base hospital order, repeated cardioversion attempts at 360 joules or clinically equivalent biphasic energy level per manufacturer's guidelines may be attempted.

Transcutaneous Cardiac Pacing (EMT-P)

- Start at a rate of 60 and adjust output to the lowest setting to maintain capture. Assess peripheral pulses and confirm correlation with paced rhythm.
- Reassess peripheral pulses. Adjust output to compensate for loss of capture.
- Increase rate **(not to exceed 100)** to maintain adequate tissue perfusion.
- For anxiety, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- Contact the base hospital if rhythm persists or for continued signs of inadequate tissue perfusion.

Vagal Maneuvers (EMT-P)

- Relative contraindications for patients with hypertension, suspected STEMI, or suspected head/brain injury.
- Reassess cardiac and hemodynamic status. Document rhythm before, during and after procedure.
- If rhythm does not covert within ten (10) seconds, follow ICEMA Reference #11050 - Tachycardias - Adult.

RESPIRATORY EMERGENCIES - ADULT

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Symptoms of chronic pulmonary disease, wheezing, cough, pursed lip breathing, decreased breath sounds, accessory muscle use, anxiety, ALOC or cyanosis.

II. BLS INTERVENTIONS

- Reduce anxiety, allow patient to assume position of comfort.
- Administer oxygen as clinically indicated, obtain oxygen saturation on room air, or on home oxygen if possible.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Maintain airway with appropriate adjuncts, including advanced airway if indicated. Obtain oxygen saturation on room air or on home oxygen if possible.
- Administer Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Administer Albuterol with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.
- Place patient on Continuous Positive Airway Pressure (CPAP), refer to ICEMA Reference #10190 - Procedure - Standard Orders.
- Consider advanced airway, refer to ICEMA Reference #10190 - Procedure - Standard Orders.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

ACUTE ASTHMA/BRONCHOSPASM/ALLERGIC REACTION/ANAPHYLAXIS

I. FIELD ASSESSMENT/TREATMENT INDICATORS

History of prior attacks, possible toxic inhalation or allergic reaction, associated with wheezing, diminished breath sounds or cough.

II. BLS INTERVENTIONS (For severe asthma and/or anaphylaxis **only**)

- Reduce anxiety, allow patient to assume position of comfort.
- Administer oxygen as clinically indicated, humidified oxygen preferred.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Maintain airway with appropriate adjuncts, obtain oxygen saturation on room air if possible.
- Administer Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.
- For signs of inadequate tissue perfusion, initiate IV bolus of 300 cc NS. If signs of inadequate tissue perfusion persist may repeat fluid bolus one (1) time.
- If no response to Albuterol, administer Epinephrine (1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders. Contact base hospital for patients with a history of coronary artery disease, history of hypertension or over 40 years of age prior to administration of Epinephrine.
- May repeat Epinephrine (1 mg/ml), per ICEMA Reference #7040 - Medication - Standard Orders, after 15 minutes one (1) time.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Administer Albuterol, with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.
- For suspected allergic reaction, consider Diphenhydramine per ICEMA Reference #7040 - Medication - Standard Orders.
- Place patient on Continuous Positive Airway Pressure (CPAP), refer to ICEMA Reference #10190 - Procedure - Standard Orders.

- If no response to Albuterol, administer Epinephrine (1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders. Contact base hospital for patients with a history of coronary artery disease, history of hypertension or over 40 years of age prior to administration of Epinephrine.

- May repeat Epinephrine (1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders after 15 minutes one (1) time.

- For persistent severe anaphylactic reaction, administer Epinephrine (0.1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders.

- Consider advanced airway, refer ICEMA Reference #10190 - Procedure - Standard Orders.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

ACUTE PULMONARY EDEMA/CHF

I. FIELD ASSESSMENT/TREATMENT INDICATORS

History of cardiac disease, including CHF, and may present with rales, occasional wheezes, jugular venous distention and/or peripheral edema.

II. BLS INTERVENTIONS

- Reduce anxiety, allow patient to assume position of comfort.

- Administer oxygen as clinically indicated. For pulmonary edema with high altitude as a suspected etiology, descend to a lower altitude and administer high flow oxygen with a non re-breather mask.

- Be prepared to support ventilations as clinically indicated.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.

- Maintain airway with appropriate adjuncts, obtain oxygen saturation on room air if possible.

- Administer Nitroglycerine (NTG) per ICEMA Reference #7040 - Medication - Standard Orders. In the presence of hypotension (SBP less than 100), the use of NTG is contraindicated.

- If symptoms do not improve after NTG administration, consider Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Place patient on Continuous Positive Airway Pressure (CPAP), refer to ICEMA Reference #10190 - Procedure - Standard Orders.
- Consider advanced airway, refer to ICEMA Reference #10190 - Procedure - Standard Orders.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
8050	Transport of Patients (BLS)
10190	Procedure - Standard Orders

ALTERED LEVEL OF CONSCIOUSNESS/SEIZURES - ADULT

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Patient exhibiting signs/symptoms of a possible altered level of consciousness characterized by a Glasgow Coma Score of less than 15 or less than patients normal baseline.
- Suspected narcotic dependence, opiate overdose, hypoglycemia, traumatic injury, shock, toxicologic, alcoholism and assess possible cardiac causes.
- Tonic/clonic movements followed by a brief period of unconsciousness (post-ictal).
- Suspect status epilepticus for frequent or extended seizures.
- Consider carbon monoxide (CO) poisoning with any patient exposed to products of combustion.

II. BLS INTERVENTIONS

- Oxygen therapy as clinically indicated. If CO poisoning suspected, administer 100% oxygen via non-rebreather mask per ICEMA Reference #11150 - Smoke Inhalation/CO Exposure/Suspected Cyanide Toxicity.
- Position patient as tolerated. If altered gag reflex in absence of traumatic injury, place in left lateral position.
- Place patient in axial spinal stabilization per ICEMA Reference #15010 - Trauma - Adult (15 years of age and older).
- Obtain and assess blood glucose level. If indicated, administer Glucose - Oral per ICEMA Reference #7040 Medication - Standard Orders.
- If suspected opiate overdose with severely decreased respiratory drive administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Assess patient for medication related reduced respiratory rate or hypotension.
- Assess and document response to therapy.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Obtain vascular access.
- Obtain and assess blood glucose level. If indicated administer:
  - Dextrose per ICEMA Reference #7040 - Medication - Standard Orders, **or**
  - If unable to establish IV, Glucagon may be given one (1) time per ICEMA Reference #7040 - Medication - Standard Orders.
  - If indicated may repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Place on cardiac monitor and obtain a 12-lead ECG.
- For tonic/clonic type seizure activity, administer:
  - Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
  - Assess patient for medication related reduced respiratory rate or hypotension.
- For suspected opiate overdose with severely decreased respiratory drive, administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Assess and document response to therapy.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
11150	Smoke Inhalation/CO exposure/Suspected Cyanide Toxicity
15010	Trauma - Adult (15 years of age and older).

SHOCK (NON-TRAUMATIC)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Patient exhibits signs/symptoms of profound shock and hypotension with a SBP of less than 90 mm Hg for adults and a SBP less than 70 mm Hg for pediatrics.
- Determine history of illness.
- History of GI bleeding, vomiting, diarrhea, fever/sepsis or vaginal bleeding.
- Post ROSC for Out of Hospital Cardiac Arrest (OHCA).
- Consider hypoglycemia or narcotic overdose.

II. LIMITED ALS (LALS) INTERVENTIONS

- Maintain airway with appropriate adjuncts, including perilaryngeal airway adjunct if indicated.
- Obtain O_2 saturation on room air or on home oxygen if possible.
- Place AED pads on patient as precaution in event patient goes into sudden cardiac arrest.
- Obtain vascular access.
- If hypotensive or have signs or symptoms of inadequate tissue perfusion, administer fluid challenges:
  - ADULT
    - Administer 500 ml IV bolus, may repeat one (1) time until tissue perfusion improves
  - PEDIATRIC
    - Administer 20 ml/kg IV bolus, may repeat one (1) time for tachycardia, change in central/peripheral pulses or altered level of consciousness.

- For patients with no respiratory difficulties and adequate signs of tissue perfusion:

  - ADULT/PEDIATRIC

    - Maintain IV at TKO.

III. ALS INTERVENTIONS

- Perform activities identified in LALS Interventions.
- Maintain airway with appropriate adjuncts, including advanced airway if indicated. Obtain O_2 saturation on room air or on home oxygen if possible.
- Place on cardiac monitor.
- Obtain vascular access.
- If hypotensive or has signs or symptoms of inadequate tissue perfusion, administer fluid challenges:

  - ADULT

    - Administer 500 ml IV bolus, may repeat one (1) time to sustain a SBP of more than 90 mm Hg or until tissue perfusion improves.
    - If no response to fluid administration, stop fluids and administer Push Dose Epinephrine per ICEMA reference #7040 - Medication - Standard Orders.

  - PEDIATRIC

    - Administer 20 ml/kg IV bolus, may repeat one (1) time for tachycardia, change in central/peripheral pulses or altered level of consciousness.
    - If no response to fluid administration, stop fluids and administer Push Dose Epinephrine per ICEMA reference #7040 - Medication - Standard Orders.

- For adults with sustained SBP of more than 90 mm Hg, pediatrics with sustained SBP more than 70 mm Hg, no respiratory difficulties and adequate signs of tissue perfusion:

  - ADULT

    - Maintain IV at TKO.

- PEDIATRIC
  - Maintain IV at TKO.

Base Hospital May Order

- Establish 2nd large bore IV en route.

IV. REFERENCE

Number	Name
7040	Medication -Standard Orders

BURNS - ADULT
(15 years of age and older)

Burn patient requires effective communication and rapid transportation to the closest receiving hospital.

In Inyo and Mono Counties, the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #8130 - Destination Policy.

II. BLS INTERVENTIONS

- Break contact with causative agent (stop the burning process).
- Remove clothing and jewelry quickly, if indicated.
- Keep patient warm.
- Estimate % TBSA burned and depth using the "Rule of Nines".
  - An individual's palm represents 1% of TBSA and can be used to estimate scattered, irregular burns.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Thermal Burns**: Stop the burning process. Do not break blisters. Cover the affected body surface with dry, sterile dressing or sheet.
- **Chemical Burns**: Brush off dry powder, if present. Remove any contaminated or wet clothing. Irrigate with copious amounts of saline or water.
- **Tar Burns**: Cool with water, do not remove tar.
- **Electrical Burns**: Remove from electrical source (without endangering self) with a nonconductive material. Cover the affected body surface with dry, sterile dressing or sheet.

- **Eye Involvement**: Continuous flushing with NS during transport. Allow patient to remove contact lenses if possible.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death On Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- Advanced airway as indicated.

- King Airway contraindicated in airway burns.

- Airway Stabilization:

  Burn patients with respiratory compromise or potential for such, will be transported to the closest most appropriate receiving hospital for airway stabilization.

- IV access (warm IV fluids when available).

  - *Unstable:* BP less than 90 mm HG and/or signs of inadequate tissue perfusion, start 2nd IV access.

    IV NS 250 ml boluses, may repeat to a maximum of 1000 ml.

  - *Stable*: BP more than 90 mm HG and/or signs of adequate tissue perfusion.

    IV NS 500 ml /hour.

- Transport to appropriate facility.

  - *Minor Burn Classification*: Transport to the closest most appropriate receiving hospital.

  - *Moderate Burn Classification*: Transport to the closest most appropriate receiving hospital.

  - *Major Burn Classification*: Transport to the closest most appropriate Burn Center (San Bernardino County contact ARMC).

  - *Critical Trauma Patient (CTP) with Associated Burns:* Transport to the most appropriate Trauma Center.

- Burn patients with associated trauma, should be transported to the closest Trauma Center. Trauma base hospital contacted shall be made.

A. Manage Special Considerations

- **Electrical Burns**: Place AED on patient.
  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.
- **Respiratory Distress**: Use BVM as needed and transport to the nearest facility for airway control. Contact receiving hospital ASAP. Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.
- **Deteriorating Vital Signs:** Transport to the closest most appropriate receiving hospital. Contact base hospital.
- **Pulseness and Apneic**: Transport to the closest most appropriate receiving hospital and treat according to ICEMA policies. Contact base hospital.
- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.
- **Precautions and Comments**:
  - High flow oxygen is essential with known or potential respiratory injury. Beware of possible smoke inhalation.
  - Contact with appropriate advisory agency may be necessary for hazardous materials, before decontamination or patient contact.
  - Do not apply ice or ice water directly to skin surfaces, as additional injury will result.

IV. ALS INTERVENTIONS

- Advanced airway (as indicated).
- Airway Stabilization:

  Burn patients with respiratory compromise or potential for such, will be transported to the closest most appropriate receiving hospital for airway stabilization.
- Monitor ECG.

- IV/IO Access (Warm IV fluids when available).

  - *Unstable:* BP less than 90 mm HG and/or signs of inadequate tissue perfusion, start 2nd IV access.

    IV/IO NS 250 ml boluses, may repeat to a maximum of 1000 ml.

  - *Stable*: BP more than 90 mm HG and/or signs of adequate tissue perfusion.

    IV/IO NS 500 ml /hour.

  - Treat pain as indicated.

  Pain Relief: Administer an appropriate analgesic per ICEMA Reference #11140 - Pain Management - Adult. Document vital signs and pain scales every five (5) minutes until arrival at destination.

- Transport to appropriate facility:

  - *CTP with associated burns,* transport to the closest Trauma Center.

  - Burn patients with associated trauma, should be transported to the closest Trauma Center. Trauma base hospital contacted shall be made.

- Insert nasogastric/orogastric tube as indicated.

- Refer to Section V - Burn Classifications below.

A. <u>Manage Special Considerations</u>

- **Electrical Burns**: Monitor for dysrhythmias, treat according to ICEMA protocols.

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

- **Respiratory Distress**: Intubate patient if facial/oral swelling are present or if respiratory depression or distress develops due to inhalation injury.

  - Albuterol with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.

  - Administer humidified oxygen, if available.

  - Apply capnography.

- Awake and breathing patients with potential for facial/inhalation burns are not candidates for nasal tracheal intubation. CPAP may be considered, if indicated, after consultation with base hospital.

- **Deteriorating Vital Signs**: Transport to the closest receiving hospital. Contact base hospital.

- **Pulseness and Apneic**: Transport to the closest receiving hospital and treat according to ICEMA policies. Contact base hospital.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

- **Precautions and Comments**:

  - Contact with appropriate advisory agency may be necessary for hazardous materials, before decontamination or patient contact.

  - Do not apply ice or ice water directly to skin surfaces, as additional injury will result.

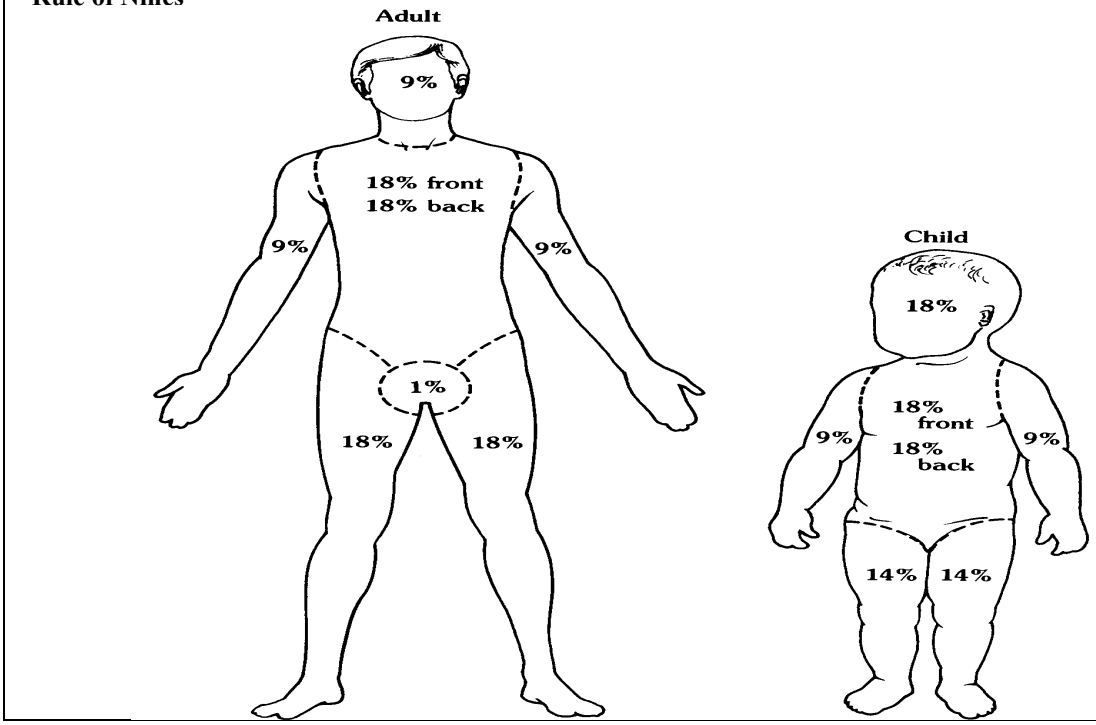
- **Base Hospital Orders**: May order additional medications, fluid boluses and CPAP.

V. BURN CLASSIFICATIONS

ADULT BURN CLASSIFICATION CHART	**DESTINATION**	
MINOR - ADULT • Less than 10% TBSA • Less than 2% Full Thickness	**CLOSEST MOST APPROPRIATE RECEIVING HOSPITAL**	
MODERATE - ADULT • 10 - 20% TBSA • 2 - 5% Full Thickness • High Voltage Injury • Suspected Inhalation Injury • Circumferential Burn • Medical problem predisposing to infection (e.g., diabetes mellitus, sickle cell disease)	**CLOSEST MOST APPROPRIATE RECEIVING HOSPITAL**	

MAJOR - ADULT	**CLOSEST MOST APPROPRIATE BURN CENTER**	
• More than 20% TBSA burn in adults • More than 5% Full Thickness • High Voltage Burn • Known Inhalation Injury • Any significant burn to face, eyes, ears, genitalia, or joints	In San Bernardino County, contact: Arrowhead Regional Medical Center (ARMC)	

"Rule of Nines"



VI. REFERENCES

Number	**Name**
7040	Medication - Standard Orders
9010	General Patient Care Guidelines
10190	Procedure - Standard Orders
11070	Adult Cardiac Arrest
11140	Pain Management - Adult
12010	Determination of Death on Scene
15030	Trauma Triage Criteria and Destination Policy

PAIN MANAGEMENT - ADULT

I. PURPOSE

To define the prehospital use of analgesics for pain management to patients with moderate to severe pain.

II. FIELD ASSESSMENT/TREATMENT INDICATORS

The prehospital use of analgesics should be considered for the following patients that have a Glasgow Coma Score (GCS) of 15 and pain score of five (5) or higher on a scale of 1 - 10:

- Acute traumatic injuries
- Acute abdominal/flank pain
- Burn injuries
- Cancer pain
- Sickle Cell Crisis

Special consideration must be given to the type of pain, the patient's overall condition, allergies, current medical conditions, and drug contraindications when deciding if pain management is appropriate and which pain medication to be administered.

III. BLS INTERVENTIONS

- Attempt to calm, reduce anxiety, and allow patient to assume position of comfort.
- Utilize ice, immobilize and splint the affected area as indicated.
- Assess patients level of pain using the pain scale from 1 - 10 with 10 being the worst pain.
- Administer oxygen as clinically indicated per ICEMA Reference # 9010 - General Patient Guidelines.

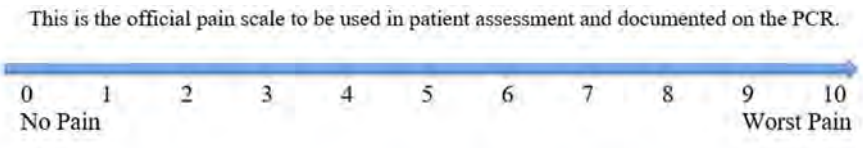
IV. ALS INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Consider early vascular access.
- Place on cardiac monitor. Obtain capnography, monitoring waveform and numerical value.
- Monitor and assess patient vital signs prior to administration of any analgesic.
- For treatment of pain as needed with a blood pressure of greater than 100 systolic:
  - Fentanyl per ICEMA Reference # 7040 - Medication - Standard Orders, **or**
  - Ketamine per ICEMA Reference # 7040 - Medication - Standard Orders.
- For treatment of pain as needed with a blood pressure less than 100 systolic:
  - Ketamine per ICEMA Reference # 7040 - Medication - Standard Orders.
- After administration of any pain medication, continuous monitoring of patients ECG and capnography is required.
- Reassess and document vital signs, capnography, and pain scores every five (5) minutes.

V. SPECIAL CONSIDERATIONS

- Once a pain medication has been administered via route of choice, changing route (i.e., from IM to IV) requires base hospital order.
- Shifting from one analgesic while treating a patient requires base hospital contact.

Pain management should only be considered for patients that have a pain score of five (5) or higher on the below scale of 1 - 10.



VI. REFERENCES

Number	Name
7040	Medication - Standard Orders
9010	General Patient Guidelines

SMOKE INHALATION/CO EXPOSURE/SUSPECTED CYANIDE TOXICITY

I. PURPOSE

To identify and treat smoke inhalation and suspected cyanide toxicity.

II. FIELD ASSESSMENT/TREATMENT INDICATORS

- Indicators
  - Exposure to fire and smoke particularly in an enclosed-space structure fires.
  - Hydrogen cyanide concentration measured in the air does not accurately correlate to patient's level of exposure and toxicity. Consider possibility of Carbon Monoxide (CO) and cyanide exposure/toxicity in any patient (or unprotected EMS field personnel) with smoke inhalation.
- Cyanide Toxicity
  - Initial signs and symptoms are non-specific and may include; headache, dizziness, nausea, vomiting, confusion, and syncope.
  - Worsening signs and symptoms may include; altered level of consciousness (ALOC), hypotension, shortness of breath, seizures, cardiac dysrhythmias, and cardiac arrest.
  - The "bitter almond" smell on the breath of a cyanide-poisoned patient is neither sensitive nor specific and should not be considered in making the assessment.
- CO Poisoning
  - Initial signs and symptoms are non-specific and may include; flu like symptoms, dizziness, severe headache, nausea, sleepiness, weakness and disorientation.
  - Worsening signs and symptoms may include; blurred vision, shortness of breath, and altered level of consciousness.

III. BLS INTERVENTIONS

- Remove patient from exposure area.
- Administer 100% oxygen via non rebreather mask.

IV. ALS INTERVENTIONS

- Monitor pulse oximetry (SpO_2) though values may be unreliable in patients suffering from smoke inhalation.
- Place on cardiac monitor and obtain a 12-lead ECG.
- IV access, consider fluid bolus of 300 cc NS.
- Use BVM with airway adjuncts as needed. Consider advanced airway if indicated.
- For treatment of bronchospasm as indicated by wheezing, refer to ICEMA Reference #11010 - Respiratory Emergencies - Adult.
- Ensure rapid transport to closest receiving emergency department.

V. REFERENCE

Number	Name
11010	Respiratory Emergencies - Adult

AIRWAY OBSTRUCTION - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Universal sign of distress.
- Sudden alteration in respiratory effort or signs of obstruction - coughing, gagging, stridor, wheezing, or apnea.
- Altered level of consciousness (for younger children this is measured by the inability to recognize caregiver, no aversion to being cared for by EMS field personnel, limp and/or ineffective cry).

II. BLS INTERVENTIONS

RESPONSIVE

- Assess for ability to cry, speak or cough (e.g., "are you choking?").
- Administer abdominal thrusts (repeated cycles of five (5) back slaps and five (5) chest thrusts for infant less than one (1) year), until the foreign body obstruction is relieved or until patient becomes unresponsive.
- After obstruction is relieved, reassess and maintain ABCs.
- Obtain oxygen saturation on room air if possible.
- Administer oxygen.
- If responsive, place in position of comfort, enlisting help of child's caregiver if needed. If child is uninjured but unresponsive with adequate breathing and a pulse, place in recovery position.

UNRESPONSIVE

- Position patient supine (for suspected trauma maintain in-line axial stabilization). Place under-shoulder support to achieve neutral cervical spinal position if indicated.
- Begin CPR, starting with thirty (30) compressions.

- Open airway using the head tilt-chin lift method (for suspected trauma, use jaw thrust). Remove object if visible.

- If apneic, attempt two (2) ventilations with bag-valve mask. If no chest rise or unable to ventilate, continue cycles of thirty (30) compressions to two (2) ventilations until obstruction is relieved or able to ventilate.

- If apneic and able to ventilate, provide one (1) breath every three (3) to five (5) seconds. Confirm that pulses are present and reassess every two (2) minutes.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.

- If obstruction persists continue with compressions until obstruction is relieved or arrival at hospital.

- Transport to closest receiving hospital for airway management.

IV. ALS INTERVENTIONS

- If obstruction persists and unable to ventilate, attempt to visualize and remove visible foreign body with Magill forceps and attempt to ventilate.

- If obstruction persists, consider Needle Cricothyrotomy per ICEMA Reference #10190 - Procedure - Standard Orders.

V. REFERENCE

Number	Name
10190	Procedure - Standard Orders

CARDIAC ARREST - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Cardiac arrest in a non-traumatic setting. Consider the potential causes of arrest for age.

II. BLS INTERVENTIONS

- Assess patient, maintain appropriate airway; begin CPR according to current AHA Guidelines.
  - ➢ Ventilate at rate of 12 to 20 per minute. Ventilatory rate will decrease as patient age increases. Ventilatory volumes shall be the minimum necessary to cause chest rise.
  - ➢ Compression rate shall be a minimum of 100 per minute.
- If suspected narcotic overdose with severely decreased respiratory drive administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Obtain and assess blood glucose level. If indicated administer Glucose - Oral per ICEMA Reference #7040 - Medication - Standard Orders.
- If patient one is (1) year of age or older, utilize AED.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Initiate CPR while applying the AED.
- Follow the instructions from the AED to determine if shock is advised.
- Obtain IO/IV access (IO is preferred for under nine (9) years of age).
- Continue with BLS airway management and transport to the nearest receiving hospital.
- For continued signs of inadequate tissue perfusion, administer fluid bolus of NS. Reassess after each bolus. May repeat two (2) times for continued signs of

inadequate tissue perfusion. In radio communications failure (RCF), may administer two (2) additional fluid boluses if indicated.

- 1 day to 8 years: 20 ml/kg NS
- 9 to 14 years: 300 ml NS

- Obtain blood glucose level, if indicated:
  - Administer Dextrose as per ICEMA Reference #7040 - Medication - Standard Orders.
  - Reassess blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.
  - If unable to start an IV, administer Glucagon per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Initiate CPR while applying the cardiac monitor.
- Determine the cardiac rhythm and defibrillate at 2 j/kg (or manufacturer's recommended equivalent) if indicated. Begin a two (2) minute cycle of CPR.
- Obtain IO/IV access (IO is preferred).
- Establish advanced airway when recourses are available, with minimal interruption to CPR per ICEMA Reference #10190 - Procedure - Standard Orders for patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.
- Insert NG/OG tube after advanced airway is established or if not placed with BLS airway.
- Continue CPR with compressions at a minimum of 100 per minute without pauses during ventilations. Ventilations should be given at a rate of one (1) breath every six (6) to eight (8) seconds.
- Utilize continuous quantitative waveform capnography, to confirm the effectiveness of chest compressions and for identification of ROSC.

Ventricular Fibrillation/Pulseless Ventricular Tachycardia

- Initial defibrillation is administered at 2 j/kg (or manufacturer's recommended equivalent). Second defibrillation is administered at 4 j/kg. Third and subsequent defibrillation attempts should be administered at 10 j/kg not to exceed the adult dose.

- Perform CPR for two (2) minutes after each defibrillation, without delaying to assess the post-defibrillation rhythm.

- Administer Epinephrine, per ICEMA Reference #7040 - Medication - Standard Orders, during each two (2) minute cycle of CPR after each defibrillation unless capnography indicates possible ROSC.

- Reassess rhythm after each two (2) minute cycle of CPR. If VF/VT persists, defibrillate as indicated above.

- After two (2) cycles of CPR, consider administering Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders, may repeat.

- If patient remains in pulseless VF/VT after five (5) cycles of CPR, consult base hospital.

Pulseless Electrical Activity/Asystole

- Assess for reversible causes and initiate treatment.

- Continue CPR with evaluation of rhythm every two (2) minutes.

- Administer initial fluid bolus of 20 ml/kg NS for all ages, may repeat at:

  - 1 day to 8 years: 20 ml/kg NS

  - 9 to 14 years: 300 ml NS

- Administer Epinephrine, per ICEMA Reference #7040 - Medication - Standard Orders, during each two (2) minute cycle of CPR after each rhythm evaluation.

Treatment Modalities for Managing Pediatric Cardiac Arrest Patient

Whenever possible, provide family members with the option of being present during the resuscitation of an infant or a child. For any termination of efforts, base hospital contact is required.

- Insert NG/OG tube to relieve gastric distention if the patient has an advanced or BLS airway per ICEMA Reference #10190 - Procedure - Standard Orders.

- For continued signs of inadequate tissue perfusion, administer fluid bolus of NS. Reassess after each bolus. May repeat two (2) times for continued signs of inadequate tissue perfusion. In RCF, may administer two (2) additional fluid boluses if indicated.

  - 1 day to 8 years: 20 ml/kg NS

  - 9 to 14 years: 300 ml NS

- Obtain blood glucose level. If indicated:

  - Administer Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.

  - Reassess blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.

- For suspected opiate overdose, administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.

If ROSC is achieved, obtain a 12-lead ECG, upload and document in ePCR.

- Utilize continuous waveform capnography, to identify loss of circulation.

- For continued signs of profound shock and hypotension with SBP less than 70 mm Hg after successful resuscitation, administer Push Dose Epinephrine per ICEMA Reference #7040 - Medication - Standard Orders.

- Base hospital physician may order additional medications or interventions as indicated by patient condition.

V. REFERENCES

Number	**Name**
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

ALTERED LEVEL OF CONSCIOUSNESS - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Patient exhibits inappropriate behavior for age.
- History or observation of an Apparent Life Threatening Event (ALTE).

II. BLS INTERVENTIONS

- Assess environment and determine possible causes for illness.
- Axial-spinal stabilization, if clinically indicated.
- Oxygen therapy, if clinically indicated.
- Airway management, as indicated (OPA/NPA, BVM ventilation).
- Obtain and assess blood glucose level. If indicated, administer Glucose - Oral per ICEMA Reference #7040 - Medication - Standard Orders.
- If suspected narcotic overdose with severely decreased respiratory drive, administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Obtain patient temperature. Begin cooling measures if temperature is elevated or warming measures if temperature is decreased.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Obtain vascular access.
- For symptomatic hypotension with poor perfusion, consider fluid bolus of 20 ml/kg of NS not to exceed 300 ml NS.
- Obtain and assess blood glucose level. If indicated administer:
  - Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.

- May repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.

- If unable to establish an IV, consider Glucagon per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.

- Establish advanced airway as indicated per ICEMA Reference #10190 - Procedure - Standard Orders.

- Place on cardiac monitor.

- Base hospital physician may order additional medication dosages and additional fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

SEIZURE - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Tonic/clonic movements followed by a brief period of unconsciousness (postictal).
- Suspect status epilepticus for frequent or extended seizures.
- History of prior seizures, narcotic dependence or diabetes.
- Febrile seizures (patients under four (4) years of age).
- Traumatic injury.

II. BLS INTERVENTIONS

- Protect patient from further injury; axial-spinal stabilization if indicated.
- Assure and maintain airway patency after cessation of seizure, with oxygen therapy as indicated.
- Airway management as indicated (OPA/NPA, BVM ventilation).
- Obtain and assess blood glucose level. If indicated administer Glucose - Oral per ICEMA Reference #7040 Medication - Standard Orders.
- Position patient in left lateral position in absence of traumatic injury; watch for absent gag reflex.
- Remove excess clothing and begin cooling measures if patient is febrile.
- Protect patient during transport by padding appropriately.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Obtain vascular access.
- Obtain blood glucose level, if indicated administer:
  - Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.

- May repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.

- Glucagon per ICEMA Reference #7040 - Medication - Standard Orders, if unable to start an IV.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.

- Establish advanced airway as clinically indicated per ICEMA Reference #10190 - Procedure - Standard Orders for patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.

- Place on cardiac monitor if indicated.

- For tonic/clonic type seizure activity administer:

  - Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.

  - Assess and document response to therapy.

  - Base hospital may order additional medication dosages or a fluid bolus.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

TRAUMA - ADULT
(15 years of age and older)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

In Inyo and Mono Counties, the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patent airway, protecting cervical spine.
- Obtain O_2 saturation (if BLS equipped).
- Administer oxygen and/or ventilate as needed.
- Keep patient warm.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: If the patient meet(s) any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

- Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

- Penetrating trauma without any NSAID indicators are not candidates for axial spinal immobilization.

NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Abdominal Trauma**: Cover eviscerated organs with saline dampened gauze. Do not attempt to replace organs into the abdominal cavity.

- **Amputations**: Control bleeding. Rinse amputated part gently with sterile irrigation saline to remove loose debris/gross contamination. Place amputated part in dry, sterile gauze and in a plastic bag surrounded by ice (if available). Prevent direct contact with ice. Document in the narrative who the amputated part was given to.

  Partial Amputation: Splint in anatomic position and elevate the extremity.

- **Bleeding**:

  - Apply direct pressure and/or pressure dressing.

  - To control life-threatening bleeding of a severely injured extremity, consider application of tourniquet when direct pressure or pressure dressing fails.

- **Chest Trauma**: If a wound is present, cover it with an occlusive dressing. If the patient's ventilations are being assisted, dress wound loosely, (do not seal). Continuously reevaluate patient for the development of tension pneumothorax.

- **Flail Chest**: Stabilize chest, observe for tension pneumothorax. Consider assisted ventilations.

- **Fractures**: Immobilize above and below the injury. Apply splint to injury in position found except:

  - **Femur**: Apply traction splint if indicated.

  - **Grossly angulated long bone with distal neurovascular compromise**: Apply gentle unidirectional traction to improve circulation.

  - **Check and document distal pulse before and after positioning**.

- **Genital Injuries**: Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputations the same as extremity amputations.

- **Head and Neck Trauma**: Place brain injured patients in reverse Trendelenburg (elevate the head of the backboard 15 - 20 degrees), if the patient exhibits no signs of shock.

  - **Eye**: Whenever possible protect an injured eye with a rigid dressing, cup or eye shield. Do not attempt to replace a partially torn globe, stabilize it in place with sterile saline soaked gauze. Cover uninjured eye.

  - **Avulsed Tooth**: Collect teeth, place in moist, sterile saline gauze and place in a plastic bag.

- **Impaled Object**: Immobilize and leave in place. Remove object if it interferes with CPR, or if the object is impaled in the face, cheek or neck and is compromising ventilations.

- **Pregnancy**: Where axial spinal stabilization precaution is indicated, the board should be elevated at least 4 inches on the right side for those patients who have a large pregnant uterus, usually applies to pregnant females greater than or equal to 24 weeks of gestation.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- Advanced airway (as indicated).
  - Unmanageable Airway: Transport to the closest most appropriate receiving hospital when the patient requires advanced airway and an adequate airway cannot be maintained with a BVM device.
- Apply AED.
- Establish IV access (administer warm IV fluids when available).
  - *Unstable*: If BP is less than 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: Maintain IV if BP is more than 90 mm Hg and/or signs of adequate tissue perfusion.

  Blunt Trauma:
  - *Unstable*: Establish IV NS open until stable or 2000 ml maximum is infused.
  - *Stable*: Maintain IV NS, TKO.

  Penetrating Trauma:
  - *Unstable*: Establish IV NS, administer 500 ml bolus one (1) time.
  - *Stable*: Maintain IV NS, TKO.

  Isolated Closed Head Injury:
  - *Unstable:* Establish IV NS, administer 250 ml bolus. May repeat to a maximum of 500 ml.
  - *Stable*: Maintain IV NS, TKO.
- Transport to appropriate hospital.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators using the acronym (NSAID):

N-euro Deficit(s) present?
S-pinal Tenderness present?
A-ltered Mental Status?
I-ntoxication?
D-istracting Injury?

- Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

- Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization.

NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Fractures**:

  - **Isolated Extremity Trauma**: Trauma <u>without multisystem mechanism</u>. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Establish IV NS, administer 250 ml bolus one (1) time.

- **Impaled Object**: Remove object upon trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the voice prompts.

B. **<u>Determination of Death on Scene</u>**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

- *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.

  - If the patient is not responsive to trauma-oriented resuscitation, consider medical etiology and treat accordingly.

  - **Unsafe scene may warrant transport despite low potential for survival.**

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. ALS INTERVENTIONS

- Advanced Airway (as indicated):

  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then** transport to the closest receiving hospital and follow ICEMA Reference #8120 - Continuation of Care.

- Monitor ECG.

- Establish IV/IO access (administer warm IV fluids when available).

  - *Unstable:* If BP is less than 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.

- *Stable*: Maintain IV if BP is more than 90 mm Hg and/or signs of adequate tissue perfusion.

- For Tranexamic Acid (TXA) administration for blunt or penetrating traumas meeting inclusion and exclusion criteria below:

Inclusion Criteria	**Exclusion Criteria**
Within three (3) hours of injury, the prehospital use of TXA should be considered for all blunt or penetrating trauma patients with signs and symptoms of hemorrhagic shock that meet **any** one (1) of the following inclusion criteria: • Systolic blood pressure of less than 90 mm Hg at any time during patient encounter. • Significant blood loss and a heart rate more than 120. • Bleeding not controlled by direct pressure or tourniquet.	• Any patient less than 15 years of age. • Any patient more than three (3) hours post-injury. • Penetrating cranial injury. • Traumatic brain injury with brain matter exposed. • Documented cervical cord injury with motor deficits.

Blunt Trauma:

- *Unstable*: Administer IV NS until stable or 2000 ml maximum is infused.

- For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

- *Stable*: Maintain IV NS, TKO.

Penetrating Trauma:

- *Unstable*: Administer IV NS 500 ml bolus one (1) time.

- For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

- *Stable*: Maintain IV NS, TKO.

Isolated Closed Head Injury:

- ➢ *Unstable*: Administer IV NS 250 ml bolus, may repeat to a maximum of 500 ml

- ➢ *Stable*: Maintain IV NS, TKO.

- Transport to appropriate hospital.

- Insert nasogastric/orogastric tube as indicated.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  Distracting Injury?

  - ➢ Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

  - ➢ Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization.

  NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Pain Relief for Acute Traumatic Injuries**:
  - Administer an appropriate analgesic per ICEMA Reference #11140 - Pain Management - Adult. Document vital signs and pain scales every five (5) minutes until arrival at destination.
  - Consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
  - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer IV NS 250 ml bolus one (1) time.

- **Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders.

- **Impaled Object**: Remove object upon trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.
  - Treat per ICEMA Reference #11070 - Cardiac Arrest - Adult.

B. **<u>Determination of Death on Scene</u>**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

- *Severe Blunt Force Trauma Arrest*: If indicated, pronounce on scene.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" per ICEMA Reference #12010 - Determination of Death on Scene, contact the trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without trauma base hospital contact.

- **Precautions and Comments**:
  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.
  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.
  - **Unsafe scene may warrant transport despite low potential for survival.**
  - Whenever possible, consider minimal disturbance of a potential crime scene.
- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
8120	Continuation of Care
11070	Cardiac Arrest - Adult
11140	Pain Management - Adult
12010	Determination of Death on Scene

TRAUMA - PEDIATRIC
(Less than 15 years of age)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

Inyo and Mono Counties do not have trauma center designations and the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patient airway, protecting cervical spine.
- Oxygen and/or ventilate as needed, O_2 saturation (if BLS equipped).
- Keep patient warm and reassure.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: Using age appropriate assessments, if the patient meet(s) any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

  - ➢ Consider maintaining spinal alignment on the gurney, or using spinal axial immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.
  - ➢ Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization using spine board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Abdominal Trauma**: Cover eviscerated organs with saline dampened gauze. Do not attempt to replace organs into the abdominal cavity.

- **Amputations**: Control bleeding. Rinse amputated part gently with sterile irrigation saline to remove loose debris/gross contamination. Place amputated part in dry, sterile gauze and in a plastic bag surrounded by ice (if available). Prevent direct contact with ice. Document in the narrative who the amputated part was given to.

  Partial amputation: Splint in anatomic position and elevate the extremity.

- **Blunt Chest Trauma**: If a wound is present, cover it with an occlusive dressing. If the patient's ventilations are being assisted, dress wound loosely, (do not seal). Continuously re-evaluate patient for the development of tension pneumothorax.

- **Flail Chest**: Stabilize chest, observe for tension pneumothorax. Consider assisted ventilations.

- **Fractures**: Immobilize above and below the injury. Apply splint to injury in position found except:

  - **Femur**: Apply traction splint if indicated.

  - **Grossly angulated long bone with distal neurovascular compromise**: Apply gentle unidirectional traction to improve circulation.

  - **Check and document distal pulse before and after positioning**.

- **Genital Injuries**: Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputations the same as extremity amputations.

- **Head and Neck Trauma**: Place brain injured patients in reverse Trendelenburg (elevate the head of the backboard 15 - 20 degrees), if the patient exhibits no signs of shock.

  - **Eye**: Whenever possible protect an injured eye with a rigid dressing, cup or eye shield. Do not attempt to replace a partially torn globe - stabilize it in place with sterile saline soaked gauze. Cover uninjured eye.

  - **Avulsed Tooth**: Collect teeth, place in moist, sterile saline gauze and place in a plastic bag.

- **Impaled Object**: Immobilize and leave in place. Remove object if it interferes with CPR, or if the object is impaled in the face, cheek or neck and is compromising ventilations.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- Unmanageable Airway: Transport to the closest most appropriate receiving hospital when the patient requires an advance airway. An adequate airway cannot be maintained with a BVM device.

- Apply AED.

- IV Access (warm IV fluids when available).

  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV. May repeat once.

  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.

- Transport to appropriate hospital. Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closes trauma hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using spinal axial immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

  - Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Administer IV NS 250 ml bolus one (1) time.

- **Impaled Object**: Remove object upon trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the instructions.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

  - *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

  - *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the Trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. ALS INTERVENTIONS

- Establish advanced airway as indicated per ICEMA Reference #10190 - Procedure - Standard Orders.

  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then**

transport to the closest receiving hospital and follow ICEMA Reference #8100 - Continuation of Trauma Care.

- Monitor ECG.
- IV/IO Access (Warm IV fluids when available).
  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV/IO, may repeat once.
  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.
- Transport to Trauma Center: Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closest trauma hospital.
- Insert nasogastric/orogastric tube as indicated

A. Manage Special Considerations

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using spinal axial immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.
  - Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Blunt Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured - e.g. dislocated shoulder, hip fracture or dislocation.

  - **Pain Relief**:

    - Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
    - For patients four (4) years old and older, consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
    - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer 20 ml/kg NS bolus IV/IO one (1) time.

- **Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders for suspected head/brain injury.

- **Impaled Object**: Remove object upon Trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Treat per ICEMA Reference #14040 - Cardiac Arrest - Pediatric.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

  - *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the Trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without Trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders
12010	Determination of Death on Scene
14040	Cardiac Arrest - Pediatric
15030	Trauma Triage Criteria and Destination Policy

FIRELINE PARAMEDIC

I. PURPOSE

To provide guidance and medical oversight for an ICEMA paramedic (EMT-P) deployed to function as a fireline paramedic (FEMP).

This protocol is for use by authorized FEMPs during fire suppression activities and treatment of fire suppression personnel only.

II. REQUIREMENTS

- ~~1.~~ Must be a currently licensed paramedic in California.
- ~~2.~~ Must be currently accredited paramedic in the ICEMA region.
- ~~3.~~ Must be currently employed by an ICEMA approved ALS provider.
- ~~4.~~ The FEMP will follow FIRESCOPE FEMP ICS 223-11 Position Manual and all other ICS protocols.
- ~~5.~~ The FEMP will check in and obtain briefing from the Logistics Section Chief or the Medical Unit Leader, if established. Briefing will include current incident situation, anticipated medical needs, and local emergency medical system orientation.
- ~~6.~~ The FEMP will provide emergency medical treatment to personnel operating on the fireline.
- ~~7.~~ The FEMP will follow ICEMA prior to contact protocols if unable to contact the assigned base station.
- ~~8.~~ The FEMP may not perform skills outside of the ICEMA scope of practice.

III. PROCEDURE

- ~~1.~~ The EMS provider will notify ICEMA of the deployment of the FEMP to an incident. Use the Fireline Paramedic (FEMP) Deployment Notification form, which is on the ICEMA website at ICEMA.net.
- ~~2.~~ The FEMP will carry inventory in the advanced life support (ALS) pack as per the below inventory list (see Section IV. Fireline EMT-P (ALS) Pack Inventory. Inventory will be supplied and maintained by the employing

provider agency. Additional items for restock should also be maintained and secured in a vehicle or in the Medical Unit trailer.

- ~~3.~~ Incident Medical Units may not have the capability of resupplying controlled substances (narcotics). Providers should stock sufficient quantities of medical supplies and medications, especially controlled substance medications, to assure adequate supplies and medications.

- ~~4.~~ Narcotics must be under double lock and maintained on the FEMP person or secured in his/her vehicle at all times as per the ICEMA Drug and Equipment List.

- ~~5.~~ FEMP may carry an inventory of controlled substances (i.e., Fentanyl, Ketamine and Midazolam) if authorized by the employing agency's Medical Director. The authorizing Medical Director is responsible to assure full compliance with all federal and state laws relating to purchase, storage and transportation of controlled substances. Only controlled substances approved for use in the ICEMA region may be carried and their use must be in accordance with current ICEMA patient care protocols.

- ~~6.~~ Radio communication failure protocols will not be used. Prior to base contact protocols will be followed. If further treatment is needed, radio contact with the base hospital should be established as soon as possible.

- ~~7.~~ Documentation of patient care must follow ICEMA protocol utilizing the ePCR, if available, or a paper O1A form. All patient care records will be reviewed by the provider agency and ICEMA for QI purposes.

- ~~8.~~ A FEMP will be paired with a fireline EMT (FEMT) or another FEMP who will assist with basic life support (BLS) treatment and supplies.

IV. FIRELINE EMT-P (ALS) PACK INVENTORY

***Minimum Requirements**: The weight of the pack will dictate if the EMT-P chooses to carry additional ALS supplies.*

MEDICATIONS/SOLUTIONS

Medications/Solutions	ALS
Albuterol Solution 2.5 mg Handheld Nebulizer or Multidose Inhaler	4
Atropine Sulfate 1 mg	2
Ipratropium Bromide Solution 0.5 mg Handheld Nebulizer or Multidose Inhaler	4
Lidocaine 100 mg IV pre-load	2

Medications/Solutions	ALS
Aspirin 80 mg chewable	1 bottle
Dextrose 10%/250 ml (D10W 25 gm) IV/IO Bolus	1
Diphenhydramine 50 mg	4
Epinephrine 1: 10,000 1 mg	2
Epinephrine 1: 1000 1 mg	4
Glucagon 1 mg	1
Nitroglycerin - Spray 0.4 metered dose and/or tablets (tablets to be discarded 90 days after opening)	1 (equivalent of 10 patient doses)
Saline 0.9% IV 1000 ml may be divided in two 500 ml bags or four 250 ml bags.	
Tranexamic Acid (TXA) 1gm	1

CONTROLLED SUBSTANCE MEDICATIONS

Controlled Substance Medications MUST BE DOUBLED LOCKED	ALS
Midazolam	20 mg
Fentanyl (amount determined by the medical director)	200 - 400 mcg
Ketamine	120 - 500 mg

ALS AIRWAY EQUIPMENT

Airway Equipment	ALS
Endotracheal Tubes - 6.0, 7.0 and/or 7.5 cuffed with stylet	1 each
Laryngeal blades - #0, #1, #2, #3, #4 curved and/or straight	1 each
Laryngoscope handle with batteries - or 2 disposable handles	1 each
King Airway - Size 3, 4, and 5	1 each
ET Tube holder	1
End Tidal CO2 Detector	1
Needle Cricothyrotomy Kit	1
Needle Thoracostomy Kit	1

IV/MEDICATION ADMINISTRATION SUPPLIES

IV/Medication Administration Supplies	ALS
IV administration set macro drip	2
Venaguard	2

IV/Medication Administration Supplies	ALS
Alcohol preps	6
Betadine swabs	4
Tourniquet	2
Razor	1
Tape	1
IV catheters - 14, 16, 18 and 20 gauge	2
10cc syringe	2
1 cc TB syringe	2
18 gauge needle	4
25 gauge needle	2

MISCELLANEOUS EQUIPMENT

Miscellaneous	ALS
Sharps container	1
Narcotic storage per protocol	
FEMP pack inventory sheet	1
Patient care record or ePCR (Toughbook)	
AMA forms	3

Equipment	ALS
Compact AED or compact monitor defibrillator combination	
Appropriate cardiac pads	
Pulse oximetry (optional)	
Glucometer, test strips and lancets	4

The BLS pack and supplies will be carried by the FEMT or accompanying FEMP. Personal items and supplies cannot be carried in either the ALS pack or the BLS pack.

TACTICAL MEDICINE PROGRAM

I. PURPOSE

To provide medical oversight and continuous quality improvement and establish policies and procedures for EMS personnel assigned to Tactical Medicine Programs within the ICEMA region.

II. POLICY

- ~~1.~~ Tactical Medicine Programs shall be developed and utilized in accordance with the "California POST/EMSA Tactical Medicine Operational Programs and Standardized Training Recommendations" document that can be located on the EMSA website at emsa.ca.gov.

- ~~2.~~ Tactical Medicine Programs and their medical personnel (Emergency Medical Technicians (EMTs), Advanced EMT (AEMTs), Paramedics (EMT-Ps), and Registered Nurses (RNs)) shall be integrated into the local EMS system, in coordination with ICEMA, the local Emergency Medical Services (EMS) Agency (POST, 2010).

- ~~3.~~ Tactical medicine programs shall be reviewed and approved by ICEMA.

- ~~4.~~ Administration of this policy applies to EMTs, AEMTs, EMT-Ps, and RNs providing medical services within an established EMS Agency and as part of a recognized Tactical Medical Program.

  - ~~a.~~ The medical scope of practice for EMTs, AEMTs and EMT-Ps is consistent with Title 22, Division 9 and all ICEMA protocols.

- ~~5.~~ Tactical Medicine Programs should designate a Tactical Medicine Program Director as defined within POST and EMSA guidelines.

- ~~6.~~ Tactical Medicine Programs should designate a physician as a Tactical Medicine Medial Director "to provide medical direction, continuous quality improvement, medical oversight, and act as a resource for medical contingency planning" (POST, 2010).

- ~~7.~~ Tactical Medicine Operational Programs should have components pertaining to planning, medical oversight, quality improvement and training as defined in *Tactical Medicine Operational Programs and Standardized Training Recommendations* (POST, 2010; Section 2.2.1-7).
- ~~8.~~ Tactical Medicine Programs should include tactical medical personnel in mission planning and risk assessment to ensure appropriate assets are

available for the identified mission as defined in *Tactical Medicine Operational Programs and Standardized Training Recommendations* (POST, 2010; Section 2.2.2).

III. PROCEDURE

- ~~1.~~ All agencies that intend to provide a Tactical Medicine Program will:
  - ~~a.~~ Submit an original application indicating the type of program. The Specialty and Optional Scope Program Application is available on the ICEMA website at ICEMA.net.
  - ~~b.~~ Submit a copy of the proposed program to include all information as listed on the application.
  - ~~c.~~ Provide a list of all RNs, EMTs and EMT-Ps assigned to the Tactical Medicine Program.
  - ~~d.~~ Tactical medical personnel must be:
    - ~~1)~~ EMT-Ps must be California licensed and accredited by ICEMA.
    - ~~2)~~ EMTs and AEMTs must be California certified.
    - ~~3)~~ RNs must be licensed as a Registered Nurse in California and an approved Flight Nurse, MICN, or EMT-P within the ICEMA region.
  - ~~e.~~ Participate in ICEMA approved Continuous Quality Improvement process.

IV. TRAINING

Designated Tactical Emergency Medical Support (TEMS) personnel shall successfully complete all initial and ongoing recommended training provided by an approved tactical medicine training program as listed in the California POST/EMSA *Tactical Medicine Operational Programs and Standardized Training Recommendations* - March 2010 document.

V. DRUG AND EQUIPMENT LISTS

Equipment and supplies carried and utilized by Tactical Emergency Medical Support (TEMS) personnel shall be consistent with the items listed in the California POST/EMSA *Tactical Medicine Operational Programs and Standardized Training Recommendations* document. Equipment and supplies shall be based on the appropriate level of personnel utilized for the particular Tactical Medicine Program (TEMS BLS or TEMS ALS).

The Tactical Medicine Program standard list of drugs and equipment carried by TEMS BLS or TEMS ALS medical personnel must be reviewed and approved by ICEMA prior to issue or use by EMT or EMT-P personnel.

TACTICAL MEDICINE OPERATIONAL EQUIPMENT RECOMMENDATIONS

Medications	BLS	ALS
Albuterol 2.5 mg with Atrovent 0.5 mg MDI		1
Aspirin 81 mg		1 bottle
Atropine Sulfate 1 mg preload		1
Dextrose 50% 25 gm preload		1
Diphenhydramine 50 mg		2
Epinephrine (1:1000) 1 mg		2
Epinephrine (1:10,000)1 mg preload		2
Glucagon 1 mg		1
Naloxone 2 mg preload		2
Nerve Agent Antidote (DuoDote)		1
Nitroglycerine 0.4 metered dose or tablets (tablets to be discarded 90 days after opening)		1
Normal Saline 500 ml		2
Ondansetron 4 mg IV/IM/oral tabs		4
Tranexamic Acid (TXA) 1gm		1

CONTROLLED SUBSTANCE MEDICATIONS

Controlled Substance Medications MUST BE DOUBLED LOCKED	BLS	ALS
Midazolam		20 mgs
Fentanyl		200 - 400 mcg
Ketamine		120 - 500 mg

AIRWAY EQUIPMENT

Airway Equipment	BLS	ALS
Chest seal and Flutter Valve		1
End Tidal CO2 (device may be integrated into bag)		1
Endotracheal Tubes - 6.0 and/or 6.5, 7.0 and/or 7.5, and 8.0 and/or 8.5 with stylet		1 each
ET Tube holder		1
King LTS-D Size 4 and 5	1 each if approved	1 each
Laryngoscope Kit		1
Nasopharyngeal Airways Adult	1 set	1 set
Needle Cricothyrotomy Device		1
Needle Thoracostomy Kit		1
Suction (hand held)	1	1

Airway Equipment	BLS	ALS
Ventilation Bag collapsible (BVM)	1	1

IV/MONITORING EQUIPMENT

IV/Needle/Syringes	BLS	ALS
AED (with waveform monitoring preferred)	1	1
AED Pads	1	1
Blood Pressure Cuff	1	1
IO Device and Needles		1
IV Needles 14-20 Gauge		1 of each
IV Start Kit		1
IV Tubing		1
Pulse Oximeter (optional)		1
Saline Flush		2
Saline Lock		2
Stethoscope	1	1
Syringes 3 cc, 5 cc, 10 cc		1 each

DRESSING AND SPLINTING

Dressing/Splints	BLS	ALS
CoTCCC - Recommended tourniquet system	1	1
Elastic compression dressing	1	1
Latex free gloves	1	1
N95 Mask	1	1
Occlusive dressing	1	1
Roller bandage	1	1
Splint - semi-ridged moldable	1	1
Sterile gauze pads	1	1
Tape	1	1
Trauma dressing	1	1
Trauma shears	1	1
Triangle bandage	1	1
Hemostatic impregnated gauze non-exothermic, i.e., Combat Gauze (optional)	2	2

MISCELLANEOUS EQUIPMENT

Miscellaneous Equipment	BLS	ALS
Litter	1	1
Patient care record	1	1
Personal protection equipment (PPE)	1	1
Triage tags	10	10
Tactical light	1	1

Miscellaneous Equipment	BLS	ALS
Eyeware	1	1
Rescue blanket	1	1
Self-heating blanket	1	1

SMOKE INHALATION/CO EXPOSURE/SUSPECTED CYANIDE TOXICITY
(Expanded Scope Specialty Program)

I. PURPOSE

To identify and treat smoke inhalation and suspected cyanide toxicity.

II. AUTHORITY

California Health and Safety Code, Sections 1797.172 and 1797.185

California Code of Regulations, Title 22, Division 9, Chapter 4

III. FIELD ASSESSMENT/TREATMENT INDICATORS

- Indicators
  - Exposure to fire and smoke particularly in an enclosed-space structure fires.
  - Hydrogen cyanide concentration measured in the air does not accurately correlate to patient's level of exposure and toxicity. Consider possibility of carbon monoxide (CO) and cyanide exposure/toxicity in any patient (or unprotected EMS field personnel) with smoke inhalation.
- Cyanide Toxicity
  - Initial signs and symptoms are non-specific and may include; headache, dizziness, nausea, vomiting, confusion, and syncope.
  - Worsening signs and symptoms may include; altered level of consciousness (ALOC), hypotension, shortness of breath, seizures, cardiac dysrhythmias, and cardiac arrest.
  - The "bitter almond" smell on the breath of a cyanide-poisoned patient is neither sensitive nor specific and should not be considered in making the assessment.
- Carbon Monoxide Poisoning
  - Initial signs and symptoms are non-specific and may include; flu like symptoms, dizziness, severe headache, nausea, sleepiness, weakness and disorientation.

- Worsening signs and symptoms may include; blurred vision, shortness of breath, and altered level of consciousness.

IV. ALS INTERVENTIONS

- Remove patient from exposure area.
- Administer 100% oxygen via non-rebreather mask.
- Monitor pulse oximetry (SpO_2) though values may be unreliable in patients suffering from smoke inhalation.
- Monitor Carboxyhemoglobin (SpCO) levels. (SpCO monitor is required for participation in this Specialty program.)
- IV access, consider fluid bolus of 300cc NS.
- Patients exhibiting signs and symptoms of cyanide toxicity which persist after treatment with 100% oxygen therapy should be treated rapidly with the Cyanokit.
  - Administer Hydroxocobalamin.
    - Dosage: 5 gm IV over 15 minutes. May repeat one (1) time with base hospital orders. Second dose given over 15 minutes to 2 hours depending on the response to the first dose.
    - Reconstitute: Place the vial in an upright position. Add 200 mL of 0.9% Sodium Chloride Injection (not included in the kit) to the vial using the transfer spike. Fill to the line.
    - Mix: The vial should be repeatedly inverted or rocked, not shaken, for at least 60 seconds prior to infusion.
    - Infuse Vial: Use vented intravenous tubing, hang and infuse over 15 minutes.
- Use BVM with airway adjuncts as needed. Consider advanced airway if indicated.
- Refer to ICEMA Reference #11010 - Adult Respiratory Emergencies, for treatment of bronchospasm as indicated by wheezing
- Ensure rapid transport to closest receiving emergency department. In patients with SpCO of > 25% (> 15% if pregnant) or signs and symptoms of worsening CO poisoning, consider transport to a hyperbaric facility.

- Hyperbaric Medicine
  - Arrowhead Regional Medical Center
  - Loma Linda University Medical Center
  - Redlands Community Hospital
  - St. Mary Regional Medical Center

V. REFERENCE

Number	Name
11010	Adult Respiratory Emergencies

BLS/LALS/ALS STANDARD DRUG AND EQUIPMENT LIST

Each ambulance and first responder unit shall be equipped with the following functional equipment and supplies. **This list represents mandatory items with minimum quantities** excluding narcotics, which must be kept within the range indicated. All expiration dates must be current. All packaging of drugs or equipment must be intact. No open products or torn packaging may be used.

All ALS (transport and non-transport) and BLS transport vehicles shall be inspected annually.

MEDICATIONS/SOLUTIONS

Exchanged Medications/Solutions	BLS	LALS	ALS Non-Transport	ALS Transport
Adenosine (Adenocard) 6 mg			1	1
Adenosine (Adenocard) 12 mg			2	2
Albuterol Aerosolized Solution (Proventil) - unit dose 2.5 mg		4 doses	4 doses	4 doses
Albuterol MDI with spacer		1 SPECIALTY PROGRAMS ONLY	1 SPECIALTY PROGRAMS ONLY	1 SPECIALTY PROGRAMS ONLY
Aspirin, chewable - 81 mg tablet		2	1 bottle	1 bottle
Atropine 1 mg preload			2	2
Calcium Chloride 1 gm preload			1	1
Dextrose 10% in 250 ml Water (D10W) *		2	2	2
Diphenhydramine (Benadryl) 50 mg			1	1
Epinephrine 1 mg/ml 1 mg		2	2	2
Epinephrine 0.1 mg/ml 1 mg preload			~~4~~3	~~3~~4
Glucagon 1 mg		1	1	1
Glucose paste	1 tube	1 tube	1 tube	1 tube
Ipratropium Bromide Inhalation Solution (Atrovent) unit dose 0.5 mg			4	4
Irrigating Saline and/or Sterile Water (1000 cc)	2	1	1	2
Lidocaine 100 mg			3	3
Lidocaine 2% Intravenous solution			1	1
Lidocaine 2% (Viscous) dose			1	1
Magnesium Sulfate 10 gm			1	1
Naloxone (Narcan) 2 mg preload	2	2	2	2
Nitroglycerine (NTG) - Spray 0.4 mg metered dose and/or tablets (tablets to be discarded 90 days after opening)		2	1	2
Normal Saline for Injection (10 cc)		2	2	2
Normal Saline 100 cc			1	2
Normal Saline 250 cc			1	1

Exchanged Medications/Solutions	BLS	LALS	ALS Non-Transport	ALS Transport
Normal Saline 500 ml and/or 1000 ml		2000 ml	3000 ml	6000 ml
Ondansetron (Zofran) 4 mg Oral Disintegrating Tablets (ODT)			4	4
Ondansetron (Zofran) 4 mg IM/ IV			4	4
Sodium Bicarbonate 50 mEq preload			2	2
Tranexamic Acid (TXA) 1 gm			2	2

Non-Exchange Controlled Substance Medications MUST BE DOUBLE LOCKED	BLS	LALS	ALS Non-Transport	ALS Transport
Fentanyl			200-400 mcg	200-400 mcg
Midazolam			20-40mg	20-40mg
Ketamine			120-500mg	120-500mg

AIRWAY/SUCTION EQUIPMENT

Exchanged Airway/Suction Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
CPAP circuits - all manufacture's available sizes	1 (if CPAP is carried)	1 (if CPAP is carried)	1 each	2 each
End-tidal CO2 device - Pediatric and Adult (may be integrated into bag)			1 each	1 each
Endotracheal Tubes cuffed - 6.0 and/or 6.5, 7.0 and/or 7.5 and 8.0 and/or 8.5 with stylet			2 each	2 each
ET Tube holders - adult		1 each	1 each	2 each
King LTS-D Adult: Size 3 (yellow) Size 4 (red) Size 5 (purple)	2 each SPECIALTY PROGRAMS ONLY	1 each	1 each	2 each
~~King Ped: 12-25 kg: Size 2 (green) 25-35 kg: Size 2.5 (orange)~~	~~2 each SPECIALTY PROGRAMS ONLY~~	~~1 each~~	~~1 each~~	~~2 each~~
Mask - Adult & Pediatric non-rebreather oxygen mask	2 each	2 each	2 each	2 each
Mask - Infant Simple Mask	1	1	1	1
Nasal cannulas - pediatric and adult	2 each	2 each	2 each	2 each
Naso/Orogastric feeding tubes - 5fr or 6fr, and 8fr			1 each	1 each
Naso/Orogastric tubes - 10fr or 12fr, 14fr, 16fr or 18fr			1 each	1 each
Nasopharyngeal Airways - (infant, child, and adult)	1 each	1 each	1 each	1 each
Needle Cricothyrotomy Device - Pediatric and adult or Needles for procedure 10, 12, 14 and/or 16 gauge			1 each 2 each	1 each 2 each
One way flutter valve with adapter or equivalent			1	1
Oropharyngeal Airways - (infant, child, and adult)	1 each	1 each	1 each	1 each
Rigid tonsil tip suction	1		1	1
Small volume nebulizer with universal cuff adaptor		2	2	2

Exchanged Airway/Suction Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Suction Canister	1		1	1
Suction catheters - 6fr, 8fr or 10fr, 12fr or 14fr	1 each		1 each	1 each
Ventilation Bags -				
Infant 250 ml	1	1	1	1
Pediatric 500 ml (or equivalent)	1	1	1	1
Adult	1	1	1	1
Water soluble lubricating jelly		1	1	1

Non-Exchange Airway/Suction Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Ambulance oxygen source -10 L /min for 20 minutes	1			1
Flashlight/penlight	1	1	1	1
Laryngoscope blades - #0, #1, #2, #3, #4 curved and/or straight			1 each	1 each
Laryngoscope handle with batteries - or 2 disposable handles			1	1
Magill Forceps - Pediatric and Adult			1 each	1 each
Manual powered suction device		1		
Portable oxygen with regulator - 10 L /min for 20 minutes	1	1	1	1
Portable suction device (battery operated)	1		1	1
Pulse Oximetry device	(SEE OPTIONAL EQUIPMENT SECTION, PG. 5)	1	1	1
Stethoscope	1	1	1	1
Wall mount suction device	1 (BLS TRANSPORT ONLY)			1

IV/NEEDLES/SYRINGES/MONITORING EQUIPMENT

Exchanged IV/Needles/Syringes/Monitor Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Conductive medium or Pacer/Defibrillation pads			2 each	2 each
Disposable Tourniquets		2	2	2
ECG electrodes			20	20
EZ-IO Driver			1 each	1 each
EZ-IO Needles:				
25 mm			2 each	2 each
45 mm			1 each	1 each
Glucose monitoring device with compatible strips and OSHA approved single use lancets	1	1	1	1
3-way stopcock with extension tubing			2	2
IV Catheters - sizes 14, 16, 18, 20, 22, 24		2 each	2 each	2 each

Exchanged IV/Needles/Syringes/Monitor Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
Macrodrip Administration Set Microdrip Administration Set (60 drops /cc)		3 1	3 1	3 2
Mucosal Atomizer Device (MAD) for nasal administration of medication	2	2	2	4
Pressure Infusion Bag (disposable)		1	1	1
Razors		1	2	2
Safety Needles - 20 or 21gauge and 23 or 25 gauge	2 each	2 each	2 each	2 each
Saline Lock Large Bore Tubing Needleless		2	2	2
Sterile IV dressing		2	2	2
Syringes w/wo safety needles - 1 cc, 3 cc, 10 cc catheter tip		2 each		
Syringes w/wo safety needles - 1 cc, 3 cc, 10 cc, 20 cc, 60 cc catheter tip			2 each	2 each

Non-Exchange IV/Needles/Syringes/Monitor Equipment	BLS	LALS	ALS Non-Transport	ALS Transport
12-lead ECG Monitor and Defibrillator with TCP and printout			1	1
Blood pressure cuff - large adult or thigh cuff, adult, child and infant (one of each size)	1	1	1	1
Capnography monitor and supplies, may be integrated in the cardiac monitor			1	1
Needle disposal system (OSHA approved)	1	1	1	1
Thermometer - Mercury Free with covers	1	1	1	1

OPTIONAL EQUIPMENT/MEDICATIONS

Non-Exchange Optional Equipment/Medications	BLS	LALS	ALS Non-Transport	ALS Transport
AED/defib pads - Adult (1), Pediatric (1)	1 each	1 each		
Ammonia Inhalants			2	2
Automatic CPR device (FDA approved)	1	1	1	1
Automatic transport ventilator (Specialty Program Only - ICEMA approved device)			1	1
Backboard padding	1	1	1	1
Buretrol			1	1
Chemistry profile tubes			3	3
CPAP - (must be capable of titrating pressure between 2 and 15 cm H_2O)	1 (optional)	1 (optional)	1	1
~~CyanoKit (Specialty Program Only)~~			~~1~~	~~1~~
Nerve Agent Antidote Kit (NAAK) - DuoDote or Mark I	3	3	3	3
EMS Tourniquet	1		1	1
Gum Elastic intubation stylet			2	2

Non-Exchange Optional Equipment/Medications	BLS	LALS	ALS Non-Transport	ALS Transport
Hemostatic Dressings *	1	1	1	1
IO Needles - Manual, Adult and Pediatric, Optional		Pediatric sizes only or EZ-IO needles and drivers	1 each	1 each
IV infusion pump			1	1
IV warming device		1	1	1
Manual IV Flow Rate Control Device			1	1
Manual powered suction device	1	1	1	1
Multi-lumen peripheral catheter			2	2
Needle Thoracostomy Kit (prepackaged)			2	2
Pulse Oximetry device	1			
Translaryngeal Jet Ventilation Device			1	1
Vacutainer			1	1

* Hemostatic Dressings

- Quick Clot, Z-Medica
  - Quick Clot, Combat Gauze LE
  - Quick Clot, EMS Rolled Gauze, 4x4 Dressing, TraumaPad
- Celox
  - Celox Gauze, Z-Fold Hemostatic Gauze
  - Celox Rapid, Hemostatic Z-Fold Gauze
- HemCon ChitoFlex Pro Dressing

Note:

- The above products are "packaged" in various forms (i.e., Z-fold, rolled gauze, trauma pads, 4"x4"pads) and are authorized provided they are comprised of the approved product.
- Hemostatic Celox Granules, or granules delivered in an applicator, are not authorized.

DRESSING MATERIALS/OTHER EQUIPMENT/SUPPLIES

Exchanged Dressing Materials/Other Equipment/Supplies	BLS	LALS	ALS Non-Transport	ALS Transport
Adhesive tape - 1 inch	2	2	2	2
Air occlusive dressing	1	1	1	1
Ankle and wrist restraints, soft ties acceptable	1		1	1
Antiseptic swabs/wipes	10	10	10	10
Bedpan or fracture pan Urinal	1 (BLS TRANSPORT UNITS ONLY 1 (BLS TRANSPORT UNITS ONLY			1 1
Cervical Collars - Rigid Pediatric and Adult all sizes or Cervical Collars - Adjustable Adult and Pediatric	2 each 2 each	2 each 2 each	2 each 2 each	2 each 2 each
Cold Packs	2	2	2	2
Emesis basin or disposable bags and covered waste container	1	1	1	1
Head immobilization device	2	2	2	2
OB Kit	1	1	1	1
Pneumatic or rigid splints capable of splinting all extremities	4	2	2	4
Provodine/Iodine swabs/wipes or antiseptic equivalent		4	10	10
Roller bandages - 4 inch	6	3	3	6
Sterile bandage compress or equivalent	6	2	2	6
Sterile gauze pads - 4x4 inch	4	4	4	4
Sterile sheet for Burns	2	2	2	2
Universal dressing 10x30 inches	2	2	2	2

Non-Exchange Dressing Materials/Other Equipment/Supplies	BLS	LALS	ALS Non-Transport	ALS Transport
800 MHz Radio		1	1	1
Ambulance gurney	1 (BLS TRANSPORT UNITS ONLY			1
Bandage shears	1	1	1	1
Blood Borne Pathogen Protective Equipment - (nonporous gloves, goggles face masks and gowns meeting OSHA Standards)	2	1	2	2
Pediatric Emergency Measuring Tape (Broselow, etc.)		1	1	1
Drinkable water in secured plastic container or equivalent	1 gallon			1 gallon
Long board with restraint straps	1	1	1	1
Pediatric immobilization board	1	1	1	1

Non-Exchange Dressing Materials/Other Equipment/Supplies	BLS	LALS	ALS Non-Transport	ALS Transport
Pillow, pillow case, sheets and blanket	1 set (BLS TRANSPORT UNITS ONLY			1 set
Short extrication device	1	1	1	1
Straps to secure patient to gurney	1 set (BLS TRANSPORT UNITS ONLY			1 set
Traction splint	1	1	1	1
Triage Tags - ICEMA approved	20	20	20	20

EMS AIRCRAFT STANDARD DRUG AND EQUIPMENT LIST

Each Aircraft shall be equipped with the following functional equipment and supplies. This list represents mandatory items with minimum quantities, to exclude narcotics, which must be kept within the range indicated. All expiration dates must be current. All packaging of drugs or equipment must be intact. No open products or torn packaging may be used.

MEDICATIONS/SOLUTIONS	AMOUNT
Adenosine (Adenocard) 6 mg	1
Adenosine (Adenocard) 12 mg	2
Albuterol Aerosolized Solution (Proventil) - unit dose 2.5 mg	3 doses
Aspirin, chewable - 81 mg tablet	1 bottle
Atropine 1 mg preload	2
Calcium Chloride 1 gm preload	1
Dextrose 10% in 250 ml Water (D10W) *	2
Diphenhydramine (Benadryl) 50 mg	1
Epinephrine 1 mg/ml 1 mg	2
Epinephrine 0.1 mg/ml 1mg preload	3~~2~~
Glucagon 1 mg	1
Glucopaste	1 tube
Ipratropium Bromide Inhalation Solution (Atrovent) unit dose 0.5 mg	3
Lidocaine 100 mg	3
Lidocaine 2% Intravenous solution	1
Lidocaine 2% (Viscous)	1 dose
Magnesium Sulfate 10 gms	1
Naloxone (Narcan) 2 mg preload	2
Nitroglycerin (NTG) - Spray 0.4 mg metered dose and/or tablets (tablets to be discarded 90 days after opening.)	1
Normal Saline for Injection (10 cc)	2
Normal Saline 250 ml	1
Normal Saline 500 ml and/or 1000 ml	2000 ml
Ondansetron (Zofran) 4 mg Oral Disintegrating Tablets (ODT)	4
Ondansetron (Zofran) 4 mg IM/ IV	4
Sodium Bicarbonate 50 mEq preload	2
Tranexamic Acid (TXA) 1 gm	2

CONTROLLED SUBSTANCE MEDICATIONS-MUST BE DOUBLE LOCKED	AMOUNT
Fentanyl	200-400 mcg
Ketamine	120-500mg
Midazolam	20-40 mg

AIRWAY/SUCTION EQUIPMENT	AMOUNT
Aircraft Oxygen source -10 L /min for 20 minutes	1
C-PAP circuits - all manufacture's available sizes	1 each
End-tidal CO2 device - pediatric and adult (may be integrated into bag)	1 each
Endotracheal Tubes cuffed - 6.0 and/or 6.5, 7.0 and/or 7.5 and 8.0 and/or 8.5 with stylet	2 each
ET Tube holders - adult	1 each
Flashlight/penlight	1
King LTS-D Adult: Size 3 (yellow) Size 4 (red) Size 5 (purple)	1 each
~~King Ped: 12-25 kg: Size 2 (green) 25-35 kg: Size 2.5 (orange)~~	~~1 each~~
Laryngoscope handle with batteries - or 2 disposable handles	1
Laryngoscope blades - #0, #1, #2, #3, #4 curved and/or straight	1 each
Magill Forceps - Pediatric and Adult	1 each
Nasal Cannulas - infant, pediatric and adult	2 each
Naso/Orogastric tubes - 10fr or 12fr, 14fr, 16fr or 18fr	1 each
Naso/Orogastric feeding tubes - 5fr or 6fr, and 8fr	1 each
Nasopharyngeal Airways - infant, child, and adult	1 each
Needle Cricothyrotomy Device (Approved) - Pediatric and adult *or* Needles for procedure 10, 12, 14 and/or16 gauge	1 each 2 each
Non Re-Breather O_2 Mask - Pediatric and Adult, Infant Simple Mask	2 each
One way flutter valve with adapter or equivalent	1
Oropharyngeal Airways - infant, child, and adult	1 each
Portable Oxygen with regulator - 10 L /min for 20 minutes	1
Portable suction device (battery operated) *and/or* Wall mount suction device	1 each
Pulse Oximetry device	1
Small volume nebulizer with universal cuff adaptor	1
Stethoscope	1
Suction catheters - 6fr, 8fr or 10fr, 12fr or 14fr	1 each
Ventilation Bags - Infant 250 ml, Pediatric 500 ml and Adult 1 L	1 each
Water soluble lubricating jelly	1
Ridged tonsil tip suction	1

IV/NEEDLES/SYRINGES/MONITORING EQUIPMENT	AMOUNT
12-Lead ECG Monitor and Defibrillator with TCP and printout	1
800 MHz Radio	1
Blood pressure cuff - large adult or thigh cuff, adult, child and infant	1 set
Capnography monitor and supplies, may be integrated in the cardiac monitor	1
Conductive medium *or* Adult and Pediatric Pacer/Defibrillation pads	2 each
ECG - Pediatric and Adult	20 patches
EZ IO Needles and Driver 25 mm and 45 mm	2 each 1 each
3-way stopcock with extension tubing	2

IV/NEEDLES/SYRINGES/MONITORING EQUIPMENT	AMOUNT
IO Needles - Manual, Adult and Pediatric, Optional	1 each
IV Catheters - sizes 14, 16, 18, 20, 22, 24	2 each
Glucose monitoring device	1
Macrodrip Administration Set Microdrip Administration Set (60 drops/ml)	3 1
Mucosal Atomizer Device (MAD) for nasal administration of medication	4
Needle disposal system (OSHA approved)	1
Pressure infusion bag	1
Safety Needles - 20 or 21 gauge and 23 or 25 gauge	2 each
Saline Lock	2
Syringes w/wo safety needles - 1 ml, 3 ml, 10 ml, 20 ml	2 each
Syringe - 60 ml catheter tip	2
Thermometer - Mercury free with covers	1

DRESSING MATERIALS/OTHER EQUIPMENT SUPPLIES	AMOUNT
Adhesive tape - 1 inch	2
Air occlusive dressing	1
Aircraft stretcher or litter system with approved FAA straps that allows for Axial Spinal Immobilization	1
Ankle and wrist restraints, soft ties acceptable	1
Antiseptic swabs/wipes	
Bandage shears	1
Blanket or sheet	2
Blood Borne Pathogen Protective Equipment - (nonporous gloves, goggles face masks and gowns meeting OSHA Standards)	2
Cervical Collars - Rigid Pediatric & Adult all sizes *or* Cervical Collars - Adjustable Adult and Pediatric	1 each 1 each
Emesis basin or disposable bags and covered waste container	1
Head immobilization device	1
OB Kit	1
Pediatric Emergency Measuring Tape (Broselow, etc.)	1
Pneumatic or rigid splints capable of splinting all extremities	4
Provodine/Iodine swabs/wipes or antiseptic equivalent	
Roller bandages - 4 inch	3
Sterile bandage compress or equivalent	6
Sterile gauze pads - 4x4 inch	4
Sterile Sheet for Burns	2
Traction splint	1
Universal Dressing 10x30 inches	2

OPTIONAL EQUIPMENT/MEDICATIONS	Amount
Ammonia Inhalants	2
Automatic ventilator (Approved)	1
Backboard padding	1

OPTIONAL EQUIPMENT/MEDICATIONS	Amount
BLS AED/defib pads	1
Chemistry profile tubes	3
~~CyanoKit (Specialty Program Only)~~	~~SPECIALTY PROGRAMS ONLY~~
Nerve Agent Antidote Kit (NAAK) - DuoDote or Mark I	3
D5W in bag	1
Hemostatic Dressing *	1
IV infusion pump	1
IV warming device	1
Manual powered suction device	1
Medical Tourniquet	1
Needle Thoracostomy Kit (prepackaged)	2
Pediatric immobilization board	1
Translaryngeal Jet Ventilation Device	1
Vacutainer	1

* Hemostatic Dressings

- Quick Clot, Z-Medica
  - Quick Clot, Combat Gauze LE
  - Quick Clot, EMS Rolled Gauze, 4x4 Dressing, TraumaPad
- Celox
  - Celox Gauze, Z-Fold Hemostatic Gauze
  - Celox Rapid, Hemostatic Z-Fold Gauze
- HemCon ChitoFlex Pro Dressing

Note:

- The above products are “packaged” in various forms (i.e., Z-fold, rolled gauze, trauma pads, and 4”x4” pads) and are authorized provided they are comprised of the approved product.
- Hemostatic Celox Granules, or granules delivered in an applicator, are not authorized.

CONTROLLED SUBSTANCE POLICY

I. PURPOSE

To establish minimum requirements and accountability for ICEMA approved advanced life support (ALS) providers to procure, stock, transport, and use controlled substances in compliance with the Federal Controlled Substances Act.

II. POLICY

- ~~All ICEMA approved~~ ALS providers shall have a formal agreement with a qualified Medical Director, or a drug authorizing physician, who agrees to purchase controlled substances using the appropriate DEA registration number and forms. This physician will retain ownership, accountability and responsibility for these controlled substances at all times.

- ~~All~~ ALS providers shall develop policies compliant with The Controlled Substances Act Title 21, United States Code (USC) and California Code of Regulations Title 22, Division 9, Chapter 4, Article 7, Section 100168. These policies must ensure that security mechanisms and procedures are established for controlled substances, including, but not limited to:

  - Controlled substance ordering and order tracking
  - Controlled substance receipt and accountability
  - Controlled substance master supply storage, security and documentation
  - Controlled substance labeling and tracking
  - Vehicle storage and security
  - Usage procedures and documentation
  - Reverse distribution
  - Disposal
  - Re-stocking

  Additionally, the policies must ensure that mechanisms for investigation and mitigation of suspected tampering or diversion are established, including, but not limited to:

  - Controlled substance testing
  - Discrepancy reporting
  - Tampering, theft and diversion prevention and detection
  - Usage audits

- The ALS provider's medical director, or drug authorizing physician, must be a physician licensed to practice medicine in the State of California and must apply and obtain a valid DEA registration number for the ALS provider they propose to purchase controlled substances for. If a physician has agreements with multiple ALS providers, separate DEA registration numbers are required for each individual EMS provider. Physicians should not use their personal DEA registration number that they use for their clinical practice.

III. PROCEDURE

All controlled substances shall:

- ~~1.~~ Be purchased and stored in tamper evident containers.
- ~~2.~~ Be stored in a secure and accountable manner.
- ~~3.~~ Be kept under a "double lock" system at all times.
- ~~4.~~ Be reconciled at a minimum every 24 hours or at any change of shift or change in personnel.

IV. REQUIRED DOCUMENTATION

- ~~1.~~ ALS providers must maintain a log of all purchased controlled substances for a period of no less than two (2) years.
- ~~2.~~ All controlled substance usage will be documented on all patient care records (PCR) or electronic patient care reports (ePCR).
- ~~3.~~ ALS~~EMS~~ ~~P~~provider's medical director must determine the manner by which unused and expired controlled substances are discarded. The practice must be in compliance with all applicable local, state, and federal regulations and the process should be clearly stated in the EMS provider's controlled substances policy.
- ~~4.~~ In the event of breakage of a narcotic container an incident report will be completed and the damage reported to the appropriate supervisor.
- ~~5.~~ Discrepancies in the narcotic count will be reported immediately to the appropriate supervisor and a written report must be submitted.

SAMPLE DAILY LOG

Provider Name~~Agency~~: _____

Month: _____Year: ___

~~Double Lock Shift Change Medic Date In Place Midazolam 5mg On~~

	DATE	DOUBLE LOCK IN PLACE?	KETAMINE	MIDAZOLAM 5MG	FENTANYL	DRUG ADMINISTERED - AMOUNT GIVEN/WASTED O1A # PATIENT NAME DATE/TIME MEDIC NAME	DUTY MEDIC	CAPTAIN OR SUPERVISOR
1		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
2		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
3		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
4		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
5		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
6		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
7		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature
8		Yes / No	Amount____	Amount _____	Amount ___		Can Not Be Same Signature	Can Not Be Same Signature

SAMPLE - Master Controlled Substance Inventory Log

Date/Time	Lot Number	Ketamine Quantity	Midazolam Quantity	Fentanyl Quantity	Outdated Destroyed	Action Inventory, Restock, Dispensed, Inventory Total	Signatures of Personnel I certify that we have counted and found correct all controlled substances listed.	
							Signature	Signature

MEDICATION - STANDARD ORDERS

Medications listed in this protocol may be used only for the purposes referenced by the associated ICEMA Treatment Protocol. ~~Any other use, route or dose other than those listed, must be ordered in consultation with the Base Hospital physician.~~

For Nerve Agent Antidote Kit (NAAK) or medications deployed with the ChemPack see Appendix I (Page 11).

Adenosine (Adenocard) - Adult (ALS)

Stable narrow-complex SVT or Wide complex tachycardia:

Adenosine, 6 mg rapid IVP followed immediately by 20 cc NS bolus, and Adenosine, 12 mg rapid IVP followed immediately by 20 cc NS bolus if patient does not convert. May repeat one (1) time.

Reference #s 7010, 7020, 11050

Albuterol (Proventil) Aerosolized Solution - Adult (LALS, ALS)

Albuterol, 2.5 mg nebulized, may repeat two (2) times.

Reference #s 6090, 7010, 7020, 11010, 11100

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Adult (LALS, ALS - Specialty Programs Only)

Albuterol MDI, four (4) puffs every ten (10) minutes for continued shortness of breath and wheezing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) - Pediatric (LALS, ALS)

Albuterol, 2.5 mg nebulized, may repeat two (2) times.

Reference #s 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Pediatric (LALS, ALS - Specialty Programs Only)

Albuterol MDI, four (4) puffs every ten (10) minutes for continued shortness of breath and wheezing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Aspirin, chewable (LALS, ALS)

Aspirin, 325 mg PO chewed (one (1) adult non-enteric coated aspirin) or four (4) chewable 81 mg aspirin.

Reference #s 2020, 6090, 6110, 7010, 7020, 11060

Atropine (ALS)

Atropine, 0.5 mg IV/IO. May repeat every five (5) minutes up to a maximum of 3 mg or 0.04 mg/kg.

Organophosphate poisoning:
Atropine, 2 mg IV/IO, repeat at 2 mg increments every five (5) minutes if patient remains symptomatic.

Reference #s 6090, 6110, 7010, 7020, 11040, 12020, 13010

Calcium Chloride (ALS)

Calcium Channel Blocker Poisonings:
Calcium Chloride, 1 gm (10 cc of a 10% solution) IV/IO, base hospital order only.

Reference #s 2020, 7010, 7020, 13010

Dextrose - Adult (LALS, ALS)

Hypoglycemia - Adult with blood glucose less than ~~<~~ 80 mg/dL:
Dextrose 10% /250 ml (D10W 25 gm) IV/IO Bolus

Reference #s 2020, 6090, 6110, 7010, 7020, 8010, 11050, 11080, 13020, 13030

Dextrose - Pediatric (LALS, ALS)

Hypoglycemia - Neonates (0 - 4 weeks) with blood glucose less than ~~<~~ 35 mg/dL or pediatric patients (~~greater~~more than 4 weeks) with glucose less than ~~<~~ 60 mg/dL:
Dextrose 10%/250 ml (D10W 25 gm) 0.5 gm/kg (5 ml/kg) IV/IO

Reference #s 2020, 7010, 7020, 13020, 13030, 14040, 14050, 14060

Diphenhydramine - Adult (ALS)

Diphenhydramine, 25 mg IV/IO

Diphenhydramine, 50 mg IM

Reference #s 6090, 6110, 7010, 7020, 11010, 13010

Diphenhydramine - Pediatric (ALS)

Diphenhydramine, 1 mg/kg slow IV/IO, not to exceed adult dose of 25 mg, **or**

Diphenhydramine, 2 mg/kg IM not to exceed adult dose of 50 mg IM

Reference #s 7010, 7020, 14030

Epinephrine (1 mg/ml) - Adult (LALS, ALS)

Severe Bronchospasm, Asthma Attack, Pending Respiratory Failure, ~~Anaphylactic Shock/~~Severe Allergic Reactions:

Epinephrine, 0.3 mg IM. May repeat after fifteen (15) minutes one (1) time if symptoms do not improve.

Reference # 11010

Epinephrine (0.1 mg/ml) - Adult (ALS)

For p~~P~~ersistent severe anaphylactic reaction~~shock~~:

Epinephrine (0.1 mg/ml), 0.1 mg slow IVP/IO. May repeat every five (5) minutes as needed to total dosage of 0.5 mg.

Reference # 11010

Cardiac Arrest, Asystole, PEA:

Epinephrine (0.1 mg/ml), 1 mg IV/IO. Repeat after every two (2) minute cycle of CPR.

Reference #s 2020, 6090, 6110, 7010, 7020, 11010, 11070, 12020

Epinephrine (0.01 mg/ml) - Adult (ALS)

For persistent profound shock and hypotension (Push Dose Epinephrine):

Prepare Epinephrine 0.01 mg/ml solution by mixing 9 ml of normal saline with 1 ml of Epinephrine 0.1 mg/ml in a 10 ml syringe. Administer 1 ml every one (1) to five (5) minutes titrated to maintain SBP more than 90 mm Hg.

Reference #s 2020, 6090, 6110, 7010, 7020, 7040, 11090

Epinephrine (1 mg/ml) - Pediatric (LALS, ALS)

Severe Bronchospasm, Asthma Attack, Pending Respiratory Failure, ~~Anaphylactic Shock/~~Severe Allergic Reactions:

Epinephrine, 0.01 mg/kg IM not to exceed adult dosage of 0.3 mg.

Reference #s 2020, 6090, 7010, 7020, 14010, 14030

Epinephrine (0.1 mg/ml) - Pediatric (ALS)

Anaphylactic reaction~~Shock~~ (no palpable radial pulse and depressed level of consciousness):

Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO, no more than 0.1 mg per dose. May repeat to a maximum of 0.5 mg.

Cardiac Arrest:

1 day to 8 years	Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO (do not exceed adult dosage)
9 to 14 years	Epinephrine (0.1mg/ml), 1.0 mg IV/IO

Newborn Care:

Epinephrine (0.1 mg/ml), 0.01mg/kg IV/IO if heart rate is less than 60 after one (1) minute after evaluating airway for hypoxia and assessing body temperature for hypothermia.

Epinephrine (0.1 mg/ml), 0.005 mg/kg IV/IO every ten (10) minutes for persistent hypotension as a base hospital order or in radio communication failure.

Reference # 14090

Epinephrine (0.01 mg/ml) - Pediatric (ALS)

Post resuscitation, with continued signs of profound shock and hypotension (Push Dose Epinephrine):

Prepare Epinephrine 0.01 mg/ml solution by mixing 9 ml of normal saline with 1 ml of Epinephrine 0.1 mg/ml in a 10 ml syringe. Administer 0.1ml/kg (do not exceed adult dosage), every one (1) to five (5) minutes. Titrate to maintain a SBP more than 70 mm Hg.

~~*Post resuscitation continued signs of inadequate tissue perfusion:*~~

~~1 day to 8 years Epinephrine (0.1 mg/ml), 0.5 mcg/kg/min IV/IO drip~~

Reference #s 2020, 7010, 7020, 7040, 11090, ~~14030,~~ 14040~~, 14090~~

Fentanyl - Adult (ALS)

Chest Pain (Presumed Ischemic Origin):

Fentanyl, 50 mcg slow IV/IO over one (1) minute. May repeat every five (5) minutes titrated to pain, not to exceed 200 mcg.

Fentanyl, 100 mcg IM/IN. May repeat 50 mcg every ten (10) minutes titrated to pain, not to exceed 200 mcg.

~~*Isolated Extremity*~~*Acute ~~T~~traumatic injuries, acute abdominal/flank pain, b~~Burn injuries, Cancer pain, Sickle Cell Crisis~~:*

Fentanyl, 50 mcg slow IV/IO push over one (1) minute. May repeat every five (5) minutes titrated to pain, not to exceed 200 mcg IV/IO, **or**

Fentanyl, 100 mcg IM/IN. May repeat 50 mcg every ten (10) minutes titrated to pain, not to exceed 200 mcg.

Pacing, synchronized cardioversion:

Fentanyl, 50 mcg slow IV/IO over one (1) minute. May repeat in five (5) minutes titrated to pain, not to exceed 200 mcg.

Fentanyl, 100 mcg IN. May repeat 50 mcg every ten (10) minutes titrated to pain, not to exceed 200 mcg.

Reference #s 2020, 6090, 6110, 7010, 7020, 7030, 10190, 11060, 11100, 11140, 13030, 15010

Fentanyl - Pediatric (ALS)

Fentanyl, 0.5 mcg/kg slow IV/IO over one (1) minute. May repeat in five (5) minutes titrated to pain, not to exceed 100 mcg.

Fentanyl, 1 mcg/kg IM/IN, may repeat every ten (10) minutes titrated to pain not to exceed 200 mcg.

Reference #s 2020, 6110, 7010, 7020, 7030, 11060, 13030, 14070, 15020

Glucose - Oral - Adult (BLS, LALS, ALS)

Adult with blood glucose less than ~~<~~ 80 mg/dL:

Glucose - Oral, one (1) tube for patients with an intact gag reflex and hypoglycemia.

Reference #s 7010, 7020, 11080, 11090, 11110, 13020

Glucose - Oral - Pediatric (BLS, LALS, ALS)

Hypoglycemia - Neonates (0 - 4 weeks) with blood glucose less than ~~<~~ 35 mg/dL or pediatric patients (~~greater~~more than 4 weeks) with glucose less than ~~<~~ 60 mg/dL:

Glucose - Oral, one (1) tube for patients with an intact gag reflex and hypoglycemia.

Reference #s 7010, 7020, 14050, 14060

Glucagon - Adult (LALS, ALS)

Glucagon, 1 mg IM/SC/IN, if unable to establish IV. May administer one (1) time only.

Beta blocker Poisoning:

Glucagon, 1 mg IV/IO (base hospital order only)

Reference #s 6090, 6110, 7010, 7020, 11080, 13010, 13030

Glucagon - Pediatric (LALS, ALS)

Glucagon, 0.025 mg/kg IM/IN, if unable to start an IV. May be repeated one (1) time after twenty (20) minutes for a combined maximum dose of 1 mg.

Reference #s 7010, 7020, 13030, 14050, 14060

Ipratropium Bromide (Atrovent) Inhalation Solution use with Albuterol Adult (ALS)

Atrovent, 0.5 mg nebulized. Administer one (1) dose only.

Reference #s 7010, 7020, 11010, 11100

Ipratropium Bromide (Atrovent) Metered-Dose Inhaler (MDI) use with Albuterol Adult (ALS - Specialty Programs Only)

When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 6090, 6110, 7010, 7020, 11010, 11100

Ipratropium Bromide (Atrovent) Inhalation Solution use with Albuterol - Pediatric (ALS)

1 day to 12 months	Atrovent, 0.25 mg nebulized. Administer one (1) dose only.
1 year to 14 years	Atrovent, 0.5 mg nebulized. Administer one (1) dose only.

Reference #s 7010, 7020, 14010, 14030, 14070

Ipratropium Bromide (Atrovent) Metered-Dose Inhaler (MDI) use with Albuterol - Pediatric (ALS - Specialty Programs Only)

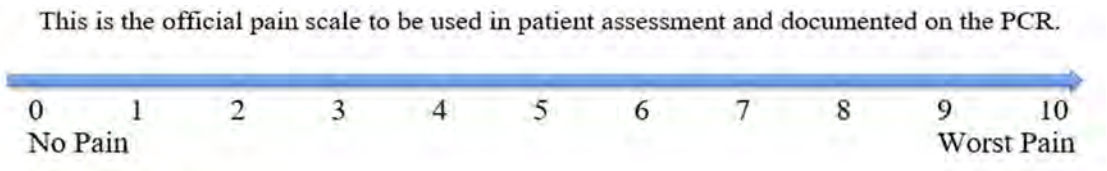
When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Ketamine - Adult (ALS)

Acute traumatic injury, acute abdominal/flank pain, burn injuries, cancer related pain and sickle cell crisis:

Ketamine, 0.3 mg/kg to a max of 30 mg in a 50 - 100 ml of NS via IV over five (5) minutes. May repeat one (1) time, after 15 minutes, if pain score remains at five (5) or higher. Do not administer IVP, IO, IM, or IN.



Reference #s 7010, 7020, 11140

Lidocaine - Adult (ALS)

Intubation, King Airway, NG/OG, for suspected increased intracranial pressure (ICP):
Lidocaine, 1.5 mg/kg IV/IO

VT (pulseless)/VF:
Initial Dose: Lidocaine, 1.5 mg/kg IV/IO

For refractory *VT (pulseless)/VF*, may administer an additional 0.75 mg/kg IV/IO, repeat one (1) time in five (5) to ten (10) minutes; maximum total dose of 3 mg/kg.

V-Tach, Wide Complex Tachycardia - with Pulses:
Lidocaine, 1.5 mg/kg slow IV/IO

May administer an additional 0.75 mg/kg slow IV/IO; maximum total dose of 3 mg/kg.
Reference #s 2020, 6090, 7010, 7020, 8010, 10190, 11050, 11070, 15010

Lidocaine - Pediatric (ALS)

~~*King Airway,*~~ *NG/OG, for suspected increased intracranial pressure (ICP):*
Lidocaine, 1.5 mg/kg IV/IO

Cardiac Arrest:

1 day to 8 years	Lidocaine, 1.0 mg/kg IV/IO
9 to 14 years	Lidocaine, 1.0 mg/kg IV/IO

May repeat Lidocaine at 0.5 mg/kg after five (5) minutes; maximum total dose of 3 mg/kg.

Reference #s 2020, 7010, 7020, 14040

Lidocaine 2% (Intravenous Solution) - Pediatric and Adult (ALS)

Pain associated with IO infusion:
Lidocaine, 0.5 mg/kg slow IO push over two (2) minutes, not to exceed 40 mg total.

Reference #s 2020, 7010, 7020, 10140, 10190

Lidocaine 2% Gel (Viscous) - Pediatric and Adult (ALS)

Pain associated with Nasogastric/Orogastric Tube insertion.

Reference # 10190

Magnesium Sulfate (ALS)

Polymorphic Ventricular Tachycardia:

Magnesium Sulfate, 2 gm IV/IO bolus over five (5) minutes for polymorphic VT if prolonged QT is observed during sinus rhythm post-cardioversion.

Eclampsia (Seizure/Tonic/Clonic Activity):

Magnesium Sulfate, 4 gm IV/IO slow IV push over three (3) to four (4) minutes.

Magnesium Sulfate, 10 mg/min IV/IO drip to prevent continued seizures.

Reference #s 2020, 7010, 7020, 8010, 14080

Midazolam (Versed) - Adult (ALS)

Behavioral Emergencies, with suspected excited delirium:

Midazolam, 5 mg IM/IN or IV/IO push. May repeat once for a total dosage of 10 mg.

Reference # 11130

Seizure:

Midazolam, 2.5 mg IV/IO/IN. May repeat in five (5) minutes for continued seizure activity, **or**

Midazolam, 5 mg IM. May repeat in ten (10) minutes for continued seizure activity.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity. Contact base hospital for additional orders and to discuss further treatment options.

Pacing, synchronized cardioversion:

Midazolam, 2 mg slow IV/IO push or IN

Reference #s 6090, 6110, 7010, 7020, 10190, 11080, 13020, 14080

Midazolam (Versed) - Pediatric (ALS)

Seizures:

Midazolam, 0.1 mg/kg IV/IO with maximum dose 2.5 mg. May repeat Midazolam in five (5) minutes, **or**

Midazolam, 0.2 mg/kg IM/IN with maximum dose of 5 mg. May repeat Midazolam in ten (10) minutes for continued seizure.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity. Contact base hospital for additional orders and to discuss further treatment options.

Reference #s 7010, 7020, 14060

Naloxone (Narcan) - Adult (BLS)

For resolution of respiratory depression related to suspected opiate overdose:

Naloxone, 0.5 mg IM/IN, may repeat Naloxone 0.5 mg IM/IN every two (2) to three (3) minutes if needed.

Do not exceed 10 mg of Naloxone total regardless of route administered.

Reference #s 7010, 7020, 8050 11080

Naloxone (Narcan) - Adult (LALS, ALS)

For resolution of respiratory depression related to suspected opiate overdose:

Naloxone, 0.5 mg IV/IO/IM/IN, may repeat Naloxone 0.5 mg IV/IO/IM/IN every two (2) to three (3) minutes if needed.

Do not exceed 10 mg of Naloxone total regardless of route administered.

Reference #s 6110, 7010, 7020, 11080

Naloxone (Narcan) - Pediatric (BLS)

For resolution of respiratory depression related to suspected opiate overdose:

1 day to 8 years	Naloxone, 0.1 mg/kg IM/IN (do not exceed the adult dose of 0.5 mg per administration)
9 to 14 years	Naloxone, 0.5 mg IM/IN

May repeat every two (2) to three (3) minutes if needed. Do not exceed the adult dosage of 10 mg total IM/IN.

Reference #s 7010, 7020, 8050, 14040, 14050

Naloxone (Narcan) - Pediatric (LALS, ALS)

For resolution of respiratory depression related to suspected opiate overdose:

1 day to 8 years	Naloxone, 0.1 mg/kg IV/IO/IM/IN (do not exceed the adult dose of 0.5 mg per administration)
9 to 14 years	Naloxone, 0.5 mg IV/IO/IM/IN

May repeat every two (2) to three (3) minutes if needed. Do not exceed the adult dosage of 10 mg total IV/IO/IM/IN.

Reference #s 7010, 7020, 14040, 14050

Nitroglycerin (NTG) (LALS, ALS)

Nitroglycerin, 0.4 mg sublingual/transmucosal.

One (1) every three (3) minutes as needed. May be repeated as long as patient continues to have signs of adequate tissue perfusion. **If a Right Ventricular Infarction is suspected, the use of nitrates requires base hospital contact.**

Nitroglycerin is contraindicated if there are signs of inadequate tissue perfusion or if sexual enhancement medications have been utilized within the past forty-eight (48) hours.

Reference #s 6090, 6110, 7010, 7020, 11010, 11060

Ondansetron (Zofran) - Patients four (4) years old to Adult (ALS)

Nausea/Vomiting:

Ondansetron, 4 mg slow IV/IO/ODT

All patients four (4) to eight (8) years old: May administer a total of 4 mgs of Ondansetron prior to base hospital contact.

All patients nine (9) and older: May administer Ondansetron 4 mg; may repeat two (2) times, at ten (10) minute intervals, for a total of 12 mgs prior to base hospital contact.

May be used as prophylactic treatment of nausea and vomiting associated with narcotic administration.

Reference #s 6110, 7010, 7020, 9120, 10100, 15010, 15020

Oxygen (non-intubated patient per appropriate delivery device)

General Administration (Hypoxia):

Titrate Oxygen at lowest rate required to maintain SPO_2 at 94%. Do not administer supplemental oxygen for SPO_2 more than~~>~~ 95%.

Chronic Obstructive Pulmonary Disease (COPD):

Titrate Oxygen at lowest rate required to maintain SPO_2 at 90%. Do not administer supplemental oxygen for SPO_2 more than~~>~~ 91%.

Reference #s ~~6140,~~ 9010, 9120, 11010, 11020, 11040, 11050, 11060, 11080, 11090, 11100, 11150, 13010, 13020, 13030, 14010, 14020, 14030, 14050, 14060, 14070, 14080, 14090, 15010, 15020

Sodium Bicarbonate (ALS) (base hospital order only)

Tricyclic Poisoning:

Sodium Bicarbonate, 1 mEq/kg IV/IO

Reference #s 2020, 7010, 7020, 13010

Tranexamic Acid (TXA) - Patients 15 years of age and older (ALS)

Signs of hemorrhagic shock meeting inclusion criteria:

Administer TXA 1 gm in 50 - 100 ml of NS via IV/IO over ten (10) minutes. Do not administer IVP as this will cause hypotension.

Reference #s 7010, 7020, 15010

APPENDIX I

Medications for self-administration or with deployment of the ChemPack.

Medications listed below may be used only for the purposes referenced by the associated ICEMA Treatment Protocol. Any other use, route or dose other than those listed, must be ordered in consultation with the Base Hospital physician.

Atropine - Pediatric (BLS, AEMT-Auto-injector only with training, ALS)

Known nerve agent/organophosphate poisoning with deployment of the ChemPack using:

Two (2) or more mild symptoms: Administer the weight-based dose listed below as soon as an exposure is known or strongly suspected. If severe symptoms develop after the first dose, two (2) additional doses should be repeated in rapid succession ten (10) minutes after the first dose; do not administer more than three (3) doses. If profound anticholinergic effects occur in the absence of excessive bronchial secretions, further doses of atropine should be withheld.

One (1) or more severe symptoms: Immediately administer (3) three weight-based doses listed below in rapid succession.

Weight-based dosing:

~~<~~Less than 6.8 kg (less than~~<~~ 15 lbs):	0.25 mg, IM using multi-dose vial
6.8 to 18 kg (15 to 40 lbs):	0.5 mg, IM using AtroPen auto-injector
18 to 41 kg (40 to 90 lbs):	1 mg, IM using AtroPen auto-injector
More than~~>~~ 41 kg (more than~~>~~ 90 lbs):	2 mg, IM using multi-dose vial

Symptoms of insecticide or nerve agent poisoning, as provided by manufacturer in the AtroPen product labeling, to guide therapy:

Mild symptoms: Blurred vision, bradycardia, breathing difficulties, chest tightness, coughing, drooling, miosis, muscular twitching, nausea, runny nose, salivation increased, stomach cramps, tachycardia, teary eyes, tremor, vomiting, or wheezing.

Severe symptoms: Breathing difficulties (severe), confused/strange behavior, defecation (involuntary), muscular twitching/generalized weakness (severe), respiratory secretions (severe), seizure, unconsciousness, urination (involuntary).

NOTE: Infants may become drowsy or unconscious with muscle floppiness as opposed to muscle twitching.

Reference #s 7040, 13010, 13040

Diazepam (Valium) - Adult (ALS)

For seizures associated with nerve agent/organophosphate exposure ONLY with the deployment of the ChemPack:

Diazepam 10 mg (5 mg/ml) auto-injector IM (if IV is unavailable), **or**
Diazepam 2.5 mg IV

Reference # 13040

Diazepam (Valium) - Pediatric (ALS)

For seizures associated with nerve agent/organophosphate exposure ONLY with the deployment of the ChemPack:

Diazepam 0.05 mg/kg IV

Reference # 13040

Nerve Agent Antidote Kit (NAAK)/Mark I or DuoDote (containing Atropine/Pralidoxime Chloride for self-administration or with deployment of the ChemPack) - Adult

Nerve agent exposure with associated symptoms:

One (1) NAAK auto-injector IM into outer thigh. May repeat up to two (2) times every ten (10) to fifteen (15) minutes if symptoms persist.

Reference #s 7010, 7020, 13010, 13040

PROCEDURE - STANDARD ORDERS

12-lead Electrocardiography (EMT-P)

- ECG should be performed prior to medication administration.
- ECG should be performed on any patient whose medical history and/or presenting symptoms are consistent with acute coronary syndrome including typical or atypical chest pain, syncopal episode, prior AMI, heart disease, or other associated risk factors.

Axial Spinal Immobilization (EMT, AEMT and EMT-P)

- Should be placed if patient meets the indicators, per ICEMA Reference #15010 - Trauma - Adult (Neuro Deficits present, Spinal Tenderness present, Altered Mental status, Intoxication, or Distracting Injury).
- An AEMT and/or EMT-P may remove if placed by BLS crew and it does not meet indicators.

Capnography (EMT-P)

- Utilize capnography in patients with respiratory distress, respiratory failure, cardiac arrest, and critically ill patients
- Perform capnography prior to pain medication administration.
- Perform capnography after administration of Midazolam for behavioral emergencies.
- Monitor waveform, numerical value and document in ePCR.

Continuous Positive Airway Pressure Device (CPAP) - Adult (EMT, AEMT and EMT-P)

- Start at lowest setting and increase slowly until patient experiences relief or until a maximum of 15 cm H_2O is reached.

External Jugular Vein Access (AEMT and EMT-P)

- Not indicated for patients eight (8) years of age and younger.
- Patient condition requires IV access and other peripheral venous access attempts are unsuccessful.

Blood Glucose Check (EMT, AEMT, and EMT-P)

- Should be assessed if the patient meets key indicators consistent with high or low blood sugar.

Intraosseous Insertion (AEMT pediatric patients only and EMT-P)

- EMT-Ps may administer Lidocaine slowly per ICEMA Reference #7040 - Medication - Standard Orders, to control infusion pain.
- Approved insertion sites:
  - Eight (8) years of age or younger (LALS and ALS):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
  - Nine (9) years of age and older (ALS only):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
    - Distal Tibia - Lower end of tibia, 2 cm above the medial malleolus.
    - Humeral Head (EZ IO only).
    - Anterior distal femur, 2 cm above the patella - Base hospital contact only.
- Leave site visible and monitor for extravasation.

King Airway Device (Perilaryngeal) - Adult (EMT Specialty Program, AEMT, and EMT-P)

- Use of King Airway device may be performed only on those patients who meet **all** of the following criteria:
  - Unresponsive, agonal respirations (less than six (6) breaths per minute) or apneic.
  - Patients 15 years or older.
  - Patients~~Anyone~~ over four (4) feet in height.
- Additional considerations:
  - Medications may **not** be given via the King Airway device.

- King Airway device should not be removed unless it becomes ineffective.

~~**King Airway Device (Perilaryngeal) - Pediatric (less than 15 years of age) (EMT Specialty Program, AEMT, and EMT-P)**~~

- ~~Use of King Airway device may be performed only on those patients who meet **all** of the following criteria:~~
  - ~~Unresponsive, agonal respirations (less than six (6) breaths per minute) or apneic.~~
  - ~~No gag reflex.~~
  - ~~Pediatric patients meeting the following criteria:~~
    - ~~35 - 45 inches or 12 - 25 kg: size 2~~
    - ~~41 - 51 inches or 25 - 35 kg: size 2.5~~
- ~~Additional Considerations:~~
  - ~~Medications may **not** be given via the King Airway device.~~
  - ~~King Airway device should not be removed unless it becomes ineffective.~~

Nasogastric/Orogastric Tube (EMT-P)

- Use viscous Lidocaine gel per ICEMA Reference #7040 - Medication - Standard Orders, for conscious patients.
- Required for all full arrest patients.

Needle Cricothyrotomy (EMT-P)

- Absolute contraindication: Transection of the distal trachea.
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- Contact base hospital if unable to ventilate adequately and transport immediately to the closest hospital for airway management.

Needle Thoracostomy (EMT-P)

- In blunt chest trauma consider bilateral tension pneumothorax if pulse oximetry (SpO_2) reading remains low with a patent airway or with poor respiratory compliance.

Oral Endotracheal Intubation - Adult (EMT-P)

- Oral endotracheal intubation is permitted only in patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.

- For suspected head/brain injury immediately prior to intubation, consider Lidocaine prophylactically per ICEMA Reference #7040 - Medication - Standard Orders.

- Monitor end-tidal CO_2 and wave form capnography.

- Monitor pulse oximetry.

- If unable to place ET after a maximum of three (3) intubation attempts (defined as placement of the laryngoscope in the mouth), then consider placing a King Airway device. If unsuccessful, continue with BLS airway management and transport to the nearest receiving hospital.

- Document verification of tube placement (auscultation, visualization, capnography).

Synchronized Cardioversion (EMT-P)

- For anxiety prior to cardioversion, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.

- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.

- If rhythm deteriorates to v-fib, turn off the sync button and defibrillate.

- Select initial energy level setting at 100 joules or a clinically equivalent biphasic energy level per manufacture guidelines. Procedure may be repeated at 200, 300 and 360 joules or a clinically equivalent biphasic energy level per manufacture guidelines.

- In radio communication failure or with base hospital order, repeated cardioversion attempts at 360 joules or clinically equivalent biphasic energy level per manufacturer's guidelines may be attempted.

Transcutaneous Cardiac Pacing (EMT-P)

- Start at a rate of 60 and adjust output to the lowest setting to maintain capture. Assess peripheral pulses and confirm correlation with paced rhythm.
- Reassess peripheral pulses. Adjust output to compensate for loss of capture.
- Increase rate **(not to exceed 100)** to maintain adequate tissue perfusion.
- For anxiety, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- Contact the base hospital if rhythm persists or for continued signs of inadequate tissue perfusion.

Vagal Maneuvers (EMT-P)

- Relative contraindications for patients with hypertension, suspected STEMI, or suspected head/brain injury.
- Reassess cardiac and hemodynamic status. Document rhythm before, during and after procedure.
- If rhythm does not covert within ten (10) seconds, follow ICEMA Reference #11050 - Tachycardias - Adult.

RESPIRATORY EMERGENCIES - ADULT

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Symptoms of chronic pulmonary disease, wheezing, cough, pursed lip breathing, decreased breath sounds, accessory muscle use, anxiety, ALOC or cyanosis.

II. BLS INTERVENTIONS

- Reduce anxiety, allow patient to assume position of comfort.
- Administer oxygen as clinically indicated, obtain oxygen saturation on room air, or on home oxygen if possible.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Maintain airway with appropriate adjuncts, including advanced airway if indicated. Obtain oxygen saturation on room air or on home oxygen if possible.
- Administer Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Administer Albuterol with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.
- Place patient on Continuous Positive Airway Pressure (CPAP), refer to ICEMA Reference #10190 - Procedure - Standard Orders.
- Consider advanced airway, refer to ICEMA Reference #10190 - Procedure - Standard Orders.
- ~~Base hospital physician may order additional medications or interventions as indicated by patient condition.~~

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

ACUTE ASTHMA/BRONCHOSPASM/ALLERGIC REACTION/ANAPHYLAXIS

I. FIELD ASSESSMENT/TREATMENT INDICATORS

History of prior attacks, possible toxic inhalation or allergic reaction, associated with wheezing, diminished breath sounds or cough.

II. BLS INTERVENTIONS (For severe asthma and/or anaphylaxis **only**)

- Reduce anxiety, allow patient to assume position of comfort.
- Administer oxygen as clinically indicated, humidified oxygen preferred.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Maintain airway with appropriate adjuncts, obtain oxygen saturation on room air if possible.
- Administer Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.
- For signs of inadequate tissue perfusion, initiate IV bolus of 300 cc NS. If signs of inadequate tissue perfusion persist may repeat fluid bolus one (1) time.
- If no response to Albuterol, administer Epinephrine (1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders. Contact base hospital for patients with a history of coronary artery disease, history of hypertension or over 40 years of age prior to administration of Epinephrine.
- May repeat Epinephrine (1 mg/ml), per ICEMA Reference #7040 - Medication - Standard Orders, after 15 minutes one (1) time.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Administer Albuterol, with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.

- For suspected allergic reaction, consider Diphenhydramine per ICEMA Reference #7040 - Medication - Standard Orders.

- Place patient on Continuous Positive Airway Pressure (CPAP), refer to ICEMA Reference #10190 - Procedure - Standard Orders.

- If no response to Albuterol, administer Epinephrine (1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders. Contact base hospital for patients with a history of coronary artery disease, history of hypertension or over 40 years of age prior to administration of Epinephrine.

- May repeat Epinephrine (1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders after 15 minutes one (1) time.

- For persistent severe anaphylactic reaction~~shock~~, administer Epinephrine (0.1 mg/ml) per ICEMA Reference #7040 - Medication - Standard Orders.

- Consider advanced airway, refer ICEMA Reference #10190 - Procedure - Standard Orders.

- ~~Base hospital physician may order additional medications or interventions as indicated by patient condition.~~

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

ACUTE PULMONARY EDEMA/CHF

I. FIELD ASSESSMENT/TREATMENT INDICATORS

History of cardiac disease, including CHF, and may present with rales, occasional wheezes, jugular venous distention and/or peripheral edema.

II. BLS INTERVENTIONS

- Reduce anxiety, allow patient to assume position of comfort.

- Administer oxygen as clinically indicated. For pulmonary edema with high altitude as a suspected etiology, descend to a lower altitude and administer high flow oxygen with a non re-breather mask.

- Be prepared to support ventilations as clinically indicated.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Maintain airway with appropriate adjuncts, obtain oxygen saturation on room air if possible.
- Administer Nitroglycerine (NTG) per ICEMA Reference #7040 - Medication - Standard Orders. In the presence of hypotension (SBP less than~~<~~ 100), the use of NTG is contraindicated.
- If symptoms do not improve after NTG administration, consider Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Place patient on Continuous Positive Airway Pressure (CPAP), refer to ICEMA Reference #10190 - Procedure - Standard Orders.
- Consider advanced airway, refer to ICEMA Reference #10190 - Procedure - Standard Orders.
- ~~Base hospital physician may order additional medications or interventions as indicated by patient condition.~~
- ~~In radio communication failure (RCF) and after the patient condition has stabilized, consider Albuterol with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.~~

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
8050	Transport of Patients (BLS)
10190	Procedure - Standard Orders

ALTERED LEVEL OF CONSCIOUSNESS/SEIZURES - ADULT

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Patient exhibiting signs/symptoms of a possible altered level of consciousness characterized by a Glasgow Coma Score of less than 15 or less than patients normal baseline.
- Suspected narcotic dependence, opiate overdose, hypoglycemia, traumatic injury, shock, toxicologic, ~~and~~ alcoholism and assess possible cardiac causes.
- Tonic/clonic movements followed by a brief period of unconsciousness (post-ictal).
- Suspect status epilepticus for frequent or extended seizures.
- Consider carbon monoxide (CO) poisoning with any patient exposed to products of combustion.

II. BLS INTERVENTIONS

- Oxygen therapy as clinically indicated. If CO poisoning suspected, administer 100% oxygen via non-rebreather mask per ICEMA Reference #11150 - Smoke Inhalation/CO Exposure/Suspected Cyanide Toxicity.
- Position patient as tolerated. If altered gag reflex in absence of traumatic injury, place in left lateral position.
- Place patient in axial spinal stabilization per ICEMA Reference #15010 - Trauma - Adult (15 years of age and older).
- Obtain and assess blood glucose level. If indicated, administer Glucose - Oral per ICEMA Reference #7040 Medication - Standard Orders.
- If suspected opiate overdose with severely decreased respiratory drive administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Assess patient for medication related reduced respiratory rate or hypotension.
- Assess and document response to therapy.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Obtain vascular access.
- Obtain and assess blood glucose level. If indicated administer:
  - Dextrose per ICEMA Reference #7040 - Medication - Standard Orders, **or**
  - If unable to establish IV, Glucagon may be given one (1) time per ICEMA Reference #7040 - Medication - Standard Orders.
  - If indicated may repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Place on cardiac monitor and obtain a 12-lead ECG.
- For tonic/clonic type seizure activity, administer:
  - Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
  - Assess patient for medication related reduced respiratory rate or hypotension.
- For suspected opiate overdose with severely decreased respiratory drive, administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Assess and document response to therapy.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
11150	Smoke Inhalation/CO exposure/Suspected Cyanide Toxicity
15010	Trauma - Adult (15 years of age and older).

SHOCK (NON-TRAUMATIC)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Patient exhibits signs/symptoms of profound shock and hypotension with a SBP of less than 90 mm Hg for adults and a SBP less than 70 mm Hg for pediatrics.
- Determine ~~mechanism~~history of illness.
- History of GI bleeding, vomiting, diarrhea~~, anaphylactic reaction,~~ fever/sepsis or vaginal bleeding.
- Post ROSC for Out of Hospital Cardiac Arrest (OHCA).
- Consider hypoglycemia or narcotic overdose.

II. LIMITED ALS (LALS) INTERVENTIONS

- Maintain airway with appropriate adjuncts, including perilaryngeal airway adjunct if indicated.
- Obtain O_2 saturation on room air or on home oxygen if possible.
- Place AED pads on patient as precaution in event patient goes into sudden cardiac arrest.
- ~~Place in trendelenburg position if tolerated.~~
- Obtain vascular access.
- If hypotensive or have signs or symptoms of inadequate tissue perfusion, administer~~give~~ fluid challenges:
  - ADULT
    - Administer 500 ml IV bolus, may repeat one (1) time until tissue perfusion improves
  - PEDIATRIC
    - Administer 20 ml/kg IV bolus, may repeat one (1) time for tachycardia, change in central/peripheral pulses~~, limb temperature transition,~~ or altered level of consciousness.

- For patients with no respiratory difficulties and adequate signs of tissue perfusion:

  - ADULT/PEDIATRIC
    - Maintain IV at TKO.

III. ALS INTERVENTIONS

- Perform activities identified in LALS Interventions.
- Maintain airway with appropriate adjuncts, including advanced airway if indicated. Obtain O_2 saturation on room air or on home oxygen if possible.
- Place on cardiac monitor.
- ~~Place in trendelenburg if tolerated.~~
- Obtain vascular access.
- If hypotensive or has signs or symptoms of inadequate tissue perfusion, administer ~~give~~ fluid challenges:

  - ADULT
    - Administer 500 ml IV bolus, may repeat one (1) time to sustain a SBP of more than ~~>~~ 90 mm Hg or until tissue perfusion improves.
    - If no response to fluid administration, stop fluids and administer Push Dose Epinephrine per ICEMA reference #7040 - Medication - Standard Orders.

  - PEDIATRIC
    - Administer 20 ml/kg IV bolus, may repeat one (1) time for tachycardia, change in central/peripheral pulses~~, limb temperature transition,~~ or altered level of consciousness.
    - If no response to fluid administration, stop fluids and administer Push Dose Epinephrine per ICEMA reference #7040 - Medication - Standard Orders.

- For adults with sustained SBP of more than ~~>~~ 90 mm Hg, pediatrics with sustained SBP more than 70 mm Hg, ~~and~~ no respiratory difficulties and adequate signs of tissue perfusion:

  - ADULT
    - Maintain IV at TKO.~~rate at 150 ml per hour.~~

  - PEDIATRIC

- Maintain IV at TKO.

Base Hospital May Order

- Establish 2nd large bore IV en route.

IV. REFERENCE

Number	Name
7040	Medication -Standard Orders

BURNS - ADULT
(15 years of age and older)

Burn patient requires effective communication and rapid transportation to the closest receiving hospital.

In Inyo and Mono Counties, the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #8130 - Destination Policy.

II. BLS INTERVENTIONS

- Break contact with causative agent (stop the burning process).
- Remove clothing and jewelry quickly, if indicated.
- Keep patient warm.
- Estimate % TBSA burned and depth using the "Rule of Nines".
  - An individual's palm represents 1% of TBSA and can be used to estimate scattered, irregular burns.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Thermal Burns**: Stop the burning process. Do not break blisters. Cover the affected body surface with dry, sterile dressing or sheet.
- **Chemical Burns**: Brush off dry powder, if present. Remove any contaminated or wet clothing. Irrigate with copious amounts of saline or water.
- **Tar Burns**: Cool with water, do not remove tar.
- **Electrical Burns**: Remove from electrical source (without endangering self) with a nonconductive material. Cover the affected body surface with dry, sterile dressing or sheet.

- **Eye Involvement**: Continuous flushing with NS during transport. Allow patient to remove contact lenses if possible.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death On Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- Advanced airway as indicated.

- King Airway contraindicated in airway burns.

- Airway Stabilization:

  Burn patients with respiratory compromise or potential for such, will be transported to the closest most appropriate receiving hospital for airway stabilization.

- IV access (warm IV fluids when available).

  - *Unstable:* BP less than~~<~~ 90 mm HG and/or signs of inadequate tissue perfusion, start 2nd IV access.

    IV NS 250 ml boluses, may repeat to a maximum of 1000 ml.

  - *Stable*: BP more than~~>~~ 90 mm HG and/or signs of adequate tissue perfusion.

    IV NS 500 ml/hour.

- Transport to appropriate facility.

  - *Minor Burn Classification*: Transport to the closest most appropriate receiving hospital.

  - *Moderate Burn Classification*: Transport to the closest most appropriate receiving hospital.

  - *Major Burn Classification*: Transport to the closest most appropriate Burn Center (San Bernardino County contact ARMC).

  - *Critical Trauma Patient (CTP) with Associated Burns:* Transport to the most appropriate Trauma Center.

- Burn patients with associated trauma, should be transported to the closest Trauma Center. Trauma base hospital contacted shall be made.

A. Manage Special Considerations

- **Electrical Burns**: Place AED on patient.
  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.
- **Respiratory Distress**: Use BVM as needed and transport to the nearest facility for airway control. Contact receiving hospital ASAP. Albuterol per ICEMA Reference #7040 - Medication - Standard Orders.
- **Deteriorating Vital Signs:** Transport to the closest most appropriate receiving hospital. Contact base hospital.
- **Pulseness and Apneic**: Transport to the closest most appropriate receiving hospital and treat according to ICEMA policies. Contact base hospital.
- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.
- **Precautions and Comments**:
  - High flow oxygen is essential with known or potential respiratory injury. Beware of possible smoke inhalation.
  - Contact with appropriate advisory agency may be necessary for hazardous materials, before decontamination or patient contact.
  - Do not apply ice or ice water directly to skin surfaces, as additional injury will result.

IV. ALS INTERVENTIONS

- Advanced airway (as indicated).
- Airway Stabilization:

  Burn patients with respiratory compromise or potential for such, will be transported to the closest most appropriate receiving hospital for airway stabilization.
- Monitor ECG.

- IV/IO Access (Warm IV fluids when available).

  - *Unstable:* BP less than~~<~~ 90 mm HG and/or signs of inadequate tissue perfusion, start 2nd IV access.

    IV/IO NS 250 ml boluses, may repeat to a maximum of 1000 ml.

  - *Stable*: BP more than~~>~~ 90 mm HG and/or signs of adequate tissue perfusion.

    IV/IO NS 500 ml /hour.

  - Treat pain as indicated.

  Pain Relief: ~~Fentanyl~~ Administer an appropriate analgesic per ICEMA Reference #~~7040 - Medication - Standard Orders~~11140 - Pain Management - Adult. Document vital signs~~BP~~ and pain scales every five (5) minutes until arrival at destination.~~while medicating for pain and reassess the patient~~.

- Transport to appropriate facility:

  - *CTP with associated burns,* transport to the closest Trauma Center.

  - Burn patients with associated trauma, should be transported to the closest Trauma Center. Trauma base hospital contacted shall be made.

- Insert nasogastric/orogastric tube as indicated.

- Refer to Section V - Burn Classifications below.

A. <u>Manage Special Considerations</u>

- **Electrical Burns**: Monitor for dysrhythmias, treat according to ICEMA protocols.

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

- **Respiratory Distress**: Intubate patient if facial/oral swelling are present or if respiratory depression or distress develops due to inhalation injury.

  - Albuterol with Atrovent per ICEMA Reference #7040 - Medication - Standard Orders.

  - Administer humidified oxygen, if available.

- Apply capnography.

- Awake and breathing patients with potential for facial/inhalation burns are not candidates for nasal tracheal intubation. CPAP may be considered, if indicated, after consultation with base hospital.

- **Deteriorating Vital Signs**: Transport to the closest receiving hospital. Contact base hospital.

- **Pulseness and Apneic**: Transport to the closest receiving hospital and treat according to ICEMA policies. Contact base hospital.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

- **Precautions and Comments**:

  - Contact with appropriate advisory agency may be necessary for hazardous materials, before decontamination or patient contact.

  - Do not apply ice or ice water directly to skin surfaces, as additional injury will result.

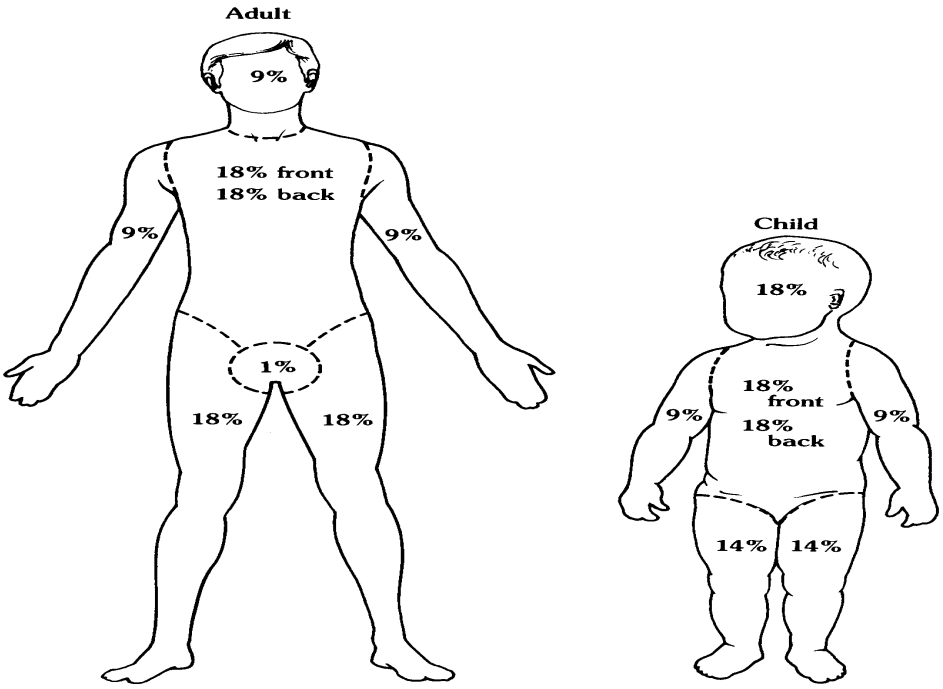
- **Base Hospital Orders**: May order additional medications, fluid boluses and CPAP.

V. BURN CLASSIFICATIONS

ADULT BURN CLASSIFICATION CHART	**DESTINATION**	
MINOR - ADULT • Less than < 10% TBSA • Less than < 2% Full Thickness	**CLOSEST MOST APPROPRIATE RECEIVING HOSPITAL**	
MODERATE - ADULT • 10 - 20% TBSA • 2 - 5% Full Thickness • High Voltage Injury • Suspected Inhalation Injury • Circumferential Burn • Medical problem predisposing to infection (e.g., diabetes mellitus, sickle cell disease)	**CLOSEST MOST APPROPRIATE RECEIVING HOSPITAL**	

MAJOR - ADULT	**CLOSEST MOST APPROPRIATE BURN CENTER**	
• More than~~>~~ 20% TBSA burn in adults • More than~~>~~ 5% Full Thickness • High Voltage Burn • Known Inhalation Injury • Any significant burn to face, eyes, ears, genitalia, or joints	In San Bernardino County, contact: Arrowhead Regional Medical Center (ARMC)	

"Rule of Nines"



VI. REFERENCES

Number	Name
7040	Medication - Standard Orders
9010	General Patient Care Guidelines
10190	Procedure - Standard Orders
11070	Adult Cardiac Arrest
11140	Pain Management - Adult
12010	Determination of Death on Scene
15030	Trauma Triage Criteria and Destination Policy

PAIN MANAGEMENT - ADULT

I. PURPOSE

To define the prehospital use of analgesics for pain management to patients with moderate to severe pain.

II. FIELD ASSESSMENT/TREATMENT INDICATORS

The prehospital use of analgesics should be considered for the following patients that have a Glasgow Coma Score (GCS) of 15 and pain score of five (5) or higher on a scale of 1 - 10:

- Acute traumatic injuries
- Acute abdominal/flank pain
- Burn injuries
- Cancer pain
- Sickle Cell Crisis

Special consideration must be given to the type of pain, the patient's overall condition, allergies, current medical conditions, and drug contraindications when deciding if pain management is appropriate and which pain medication to be administered.

III. BLS INTERVENTIONS

- Attempt to calm, reduce anxiety, and allow patient to assume position of comfort.
- Utilize ice, immobilize and splint the affected area as indicated.
- Assess patients level of pain using the pain scale from 1 - 10 with 10 being the worst pain.
- Administer oxygen as clinically indicated per ICEMA Reference # 9010 - General Patient Guidelines.

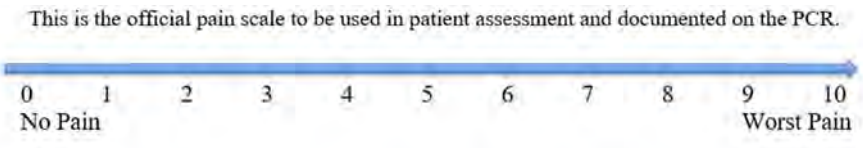
IV. ALS INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Consider early vascular access.
- Place on cardiac monitor. Obtain capnography, monitoring waveform and numerical value.
- Monitor and assess patient vital signs prior to administration of any analgesic.
- For treatment of pain as needed with a blood pressure of greater than 100 systolic:
  - Fentanyl per ICEMA Reference # 7040 - Medication - Standard Orders, **or**
  - Ketamine per ICEMA Reference # 7040 - Medication - Standard Orders.
- For treatment of pain as needed with a blood pressure less than 100 systolic:
  - Ketamine per ICEMA Reference # 7040 - Medication - Standard Orders.
- After administration of any pain medication, continuous monitoring of patients ECG and capnography is required.
- Reassess and document vital signs, capnography, and pain scores every five (5) minutes.

V. SPECIAL CONSIDERATIONS

- Once a pain medication has been administered via route of choice, changing route (i.e., from IM to IV) requires base hospital order.
- Shifting from one analgesic while treating a patient requires base hospital contact.

Pain management should only be considered for patients that have a pain score of five (5) or higher on the below scale of 1 - 10.



VI. REFERENCES

Number	Name
7040	Medication - Standard Orders
9010	General Patient Guidelines

SMOKE INHALATION/CO EXPOSURE/SUSPECTED CYANIDE TOXICITY

I. PURPOSE

To identify and treat smoke inhalation and suspected cyanide toxicity.

II. FIELD ASSESSMENT/TREATMENT INDICATORS

- Indicators
  - Exposure to fire and smoke particularly in an enclosed-space structure fires.
  - Hydrogen cyanide concentration measured in the air does not accurately correlate to patient's level of exposure and toxicity. Consider possibility of Carbon Monoxide (CO) and cyanide exposure/toxicity in any patient (or unprotected EMS field personnel) with smoke inhalation.
- Cyanide Toxicity
  - Initial signs and symptoms are non-specific and may include; headache, dizziness, nausea, vomiting, confusion, and syncope.
  - Worsening signs and symptoms may include; altered level of consciousness (ALOC), hypotension, shortness of breath, seizures, cardiac dysrhythmias, and cardiac arrest.
  - The "bitter almond" smell on the breath of a cyanide-poisoned patient is neither sensitive nor specific and should not be considered in making the assessment.
- CO Poisoning
  - Initial signs and symptoms are non-specific and may include; flu like symptoms, dizziness, severe headache, nausea, sleepiness, weakness and disorientation.
  - Worsening signs and symptoms may include; blurred vision, shortness of breath, and altered level of consciousness.

III. BLS INTERVENTIONS

- Remove patient from exposure area.
- Administer 100% oxygen via non rebreather mask.

IV. ALS INTERVENTIONS

- Monitor pulse oximetry (SpO_2) though values may be unreliable in patients suffering from smoke inhalation.
- Place on cardiac monitor and obtain a 12-lead ECG.
- IV access, consider fluid bolus of 300 cc NS.
- Use BVM with airway adjuncts as needed. Consider advanced airway if indicated.
- For treatment of bronchospasm as indicated by wheezing, refer to ICEMA Reference #11010 - Respiratory Emergencies - Adult.
- Ensure rapid transport to closest receiving emergency department.

V. REFERENCE

Number	Name
11010	Respiratory Emergencies - Adult

AIRWAY OBSTRUCTION - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Universal sign of distress.
- Sudden alteration in respiratory effort or signs of obstruction - coughing, gagging, stridor, wheezing, or apnea.
- Altered level of consciousness (for younger children this is measured by the inability to recognize caregiver, no aversion to being cared for by EMS field personnel, limp and/or ineffective cry).

II. BLS INTERVENTIONS

RESPONSIVE

- Assess for ability to cry, speak or cough (e.g., "are you choking?").
- Administer abdominal thrusts (repeated cycles of five (5) back slaps and five (5) chest thrusts for infant less than one (1) year), until the foreign body obstruction is relieved or until patient becomes unresponsive.
- After obstruction is relieved, reassess and maintain ABCs.
- Obtain oxygen saturation on room air if possible.
- Administer oxygen.
- If responsive, place in position of comfort, enlisting help of child's caregiver if needed. If child is uninjured but unresponsive with adequate breathing and a pulse, place in recovery position.

UNRESPONSIVE

- Position patient supine (for suspected trauma maintain in-line axial stabilization). Place under-shoulder support to achieve neutral cervical spinal position if indicated.
- Begin CPR, starting with thirty (30) compressions.

- Open airway using the head tilt-chin lift method (for suspected trauma, use jaw thrust). Remove object if visible.

- If apneic, attempt two (2) ventilations with bag-valve mask. If no chest rise or unable to ventilate, continue cycles of thirty (30) compressions to two (2) ventilations until obstruction is relieved or able to ventilate.

- If apneic and able to ventilate, provide one (1) breath every three (3) to five (5) seconds. Confirm that pulses are present and reassess every two (2) minutes.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.

- ~~If apneic and able to ventilate, consider King Airway placement per ICEMA Reference #10190 - Procedure - Standard Orders.~~

- If obstruction persists continue with compressions until obstruction is relieved or arrival at hospital.

- Transport to closest receiving hospital for airway management.

IV. ALS INTERVENTIONS

- If obstruction persists and unable to ventilate, attempt to visualize and remove visible foreign body with Magill forceps and attempt to ventilate.

- If obstruction persists, consider Needle Cricothyrotomy per ICEMA Reference #10190 - Procedure - Standard Orders.

V. REFERENCE

Number	**Name**
10190	Procedure - Standard Orders

CARDIAC ARREST - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Cardiac arrest in a non-traumatic setting. Consider the potential causes of arrest for age.

II. BLS INTERVENTIONS

- Assess patient, maintain appropriate airway; begin CPR according to current AHA Guidelines.
  - Ventilate at rate of 12 to 20 per minute. Ventilatory rate will decrease as patient age increases. Ventilatory volumes shall be the minimum necessary to cause chest rise.
  - Compression rate shall be a minimum of 100 per minute.
- If suspected narcotic overdose with severely decreased respiratory drive administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Obtain and assess blood glucose level. If indicated administer Glucose - Oral per ICEMA Reference #7040 - Medication - Standard Orders.
- If patient one is (1) year of age or older, utilize AED.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- Initiate CPR while applying the AED.
- Follow the instructions from the AED to determine if shock is advised.
- Obtain IO/IV access (IO is preferred for under nine (9) years of age).
- ~~Establish King Airway device when resources are available with minimal interruption to CPR per ICEMA Reference # 10190 – Procedure – Standard Orders. If unsuccessful, c~~Continue with BLS airway management and transport to the nearest receiving hospital.

- For continued signs of inadequate tissue perfusion, administer fluid bolus of NS. Reassess after each bolus. May repeat two (2) times for continued signs of inadequate tissue perfusion. In radio communications failure (RCF), may administer two (2) additional fluid boluses if indicated.

  - 1 day to 8 years: 20 ml/kg NS

  - 9 to 14 years: 300 ml NS

- Obtain blood glucose level, if indicated:

  - Administer Dextrose as per ICEMA Reference #7040 - Medication - Standard Orders.

  - Reassess blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.

  - If unable to start an IV, administer Glucagon per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.

- Initiate CPR while applying the cardiac monitor.

- Determine the cardiac rhythm and defibrillate at 2 j/kg (or manufacturer's recommended equivalent) if indicated. Begin a two (2) minute cycle of CPR.

- Obtain IO/IV access (IO is preferred).

- Establish advanced airway when recourses are available, with minimal interruption to CPR per ICEMA Reference #10190 - Procedure - Standard Orders for patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.

- Insert NG/OG tube after advanced airway is established or if not placed with BLS airway.

- Continue CPR with compressions at a minimum of 100 per minute without pauses during ventilations. Ventilations should be given at a rate of one (1) breath every six (6) to eight (8) seconds.

- Utilize continuous quantitative waveform capnography, to confirm the effectiveness of chest compressions and for identification of ROSC.

Ventricular Fibrillation/Pulseless Ventricular Tachycardia

- Initial defibrillation is administered at 2 j/kg (or manufacturer's recommended equivalent). Second defibrillation is administered at 4 j/kg. Third and subsequent defibrillation attempts should be administered at 10 j/kg not to exceed the adult dose.

- Perform CPR for two (2) minutes after each defibrillation, without delaying to assess the post-defibrillation rhythm.

- Administer Epinephrine, per ICEMA Reference #7040 - Medication - Standard Orders, during each two (2) minute cycle of CPR after each defibrillation unless capnography indicates possible ROSC.

- Reassess rhythm after each two (2) minute cycle of CPR. If VF/VT persists, defibrillate as indicated above.

- After two (2) cycles of CPR, consider administering Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders, may repeat.

- If patient remains in pulseless VF/VT after five (5) cycles of CPR, consult base hospital.

Pulseless Electrical Activity/Asystole

- Assess for reversible causes and initiate treatment.

- Continue CPR with evaluation of rhythm every two (2) minutes.

- Administer initial fluid bolus of 20 ml/kg NS for all ages, may repeat at:

  - 1 day to 8 years: 20 ml/kg NS

  - 9 to 14 years: 300 ml NS

- Administer Epinephrine, per ICEMA Reference #7040 - Medication - Standard Orders, during each two (2) minute cycle of CPR after each rhythm evaluation.

Treatment Modalities for Managing Pediatric Cardiac Arrest Patient

Whenever possible, provide family members with the option of being present during the resuscitation of an infant or a child. For any termination of efforts, base hospital contact is required.

- Insert NG/OG tube to relieve gastric distention if the patient has an advanced or BLS airway per ICEMA Reference #10190 - Procedure - Standard Orders.

- For continued signs of inadequate tissue perfusion, administer fluid bolus of NS. Reassess after each bolus. May repeat two (2) times for continued signs of inadequate tissue perfusion. In RCF, may administer two (2) additional fluid boluses if indicated.

  - 1 day to 8 years: 20 ml/kg NS
  - 9 to 14 years: 300 ml NS

- Obtain blood glucose level. If indicated:

  - Administer Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.
  - Reassess blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.

- For suspected opiate overdose, administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.

If ROSC is achieved, obtain a 12-lead ECG, upload and document in ePCR.

- Utilize continuous waveform capnography, to identify loss of circulation.
- For continued signs of ~~inadequate tissue perfusion~~profound shock and hypotension with SBP less than 70 mm Hg after successful resuscitation, administer Push Dose Epinephrine per ICEMA Reference #7040 - Medication - Standard Orders.
- Base hospital physician may order additional medications or interventions as indicated by patient condition.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

ALTERED LEVEL OF CONSCIOUSNESS - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Patient exhibits inappropriate behavior for age.
- History or observation of an Apparent Life Threatening Event (ALTE).

II. BLS INTERVENTIONS

- Assess environment and determine possible causes for illness.
- Axial-spinal stabilization, if clinically indicated.
- Oxygen therapy, if clinically indicated.
- Airway management, as indicated (OPA/NPA, BVM ventilation).
- Obtain and assess blood glucose level. If indicated, administer Glucose - Oral per ICEMA Reference #7040 - Medication - Standard Orders.
- If suspected narcotic overdose with severely decreased respiratory drive, administer Naloxone per ICEMA Reference #7040 - Medication - Standard Orders.
- Obtain patient temperature. Begin cooling measures if temperature is elevated or warming measures if temperature is decreased.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- ~~Establish advanced airway as needed.~~
- Obtain vascular access.
- For symptomatic hypotension with poor perfusion, consider fluid bolus of 20 ml/kg of NS not to exceed 300 ml NS.

- Obtain and assess blood glucose level. If indicated administer:
  - Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.
  - May repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.
  - If unable to establish an IV, consider Glucagon per ICEMA Reference #7040 - Medication - Standard Orders.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.
- Establish advanced airway as ~~needed~~indicated~~. Consider intubation~~ per ICEMA Reference #10190 Procedure - Standard Orders.~~.~~
- Place on cardiac monitor.
- Base hospital physician may order additional medication dosages and additional fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

SEIZURE - PEDIATRIC
(Less than 15 years of age)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Tonic/clonic movements followed by a brief period of unconsciousness (postictal).
- Suspect status epilepticus for frequent or extended seizures.
- History of prior seizures, narcotic dependence or diabetes.
- Febrile seizures (patients under four (4) years of age).
- Traumatic injury.

II. BLS INTERVENTIONS

- Protect patient from further injury; axial-spinal stabilization if indicated.
- Assure and maintain airway patency after cessation of seizure, with oxygen therapy as indicated.
- Airway management as indicated (OPA/NPA, BVM ventilation).
- Obtain and assess blood glucose level. If indicated administer Glucose - Oral per ICEMA Reference #7040 Medication - Standard Orders.
- Position patient in left lateral position in absence of traumatic injury; watch for absent gag reflex.
- Remove excess clothing and begin cooling measures if patient is febrile.
- Protect patient during transport by padding appropriately.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform activities identified in the BLS Interventions.
- ~~Establish advanced airway as clinically indicated.~~
- Obtain vascular access.
- Obtain blood glucose level, if indicated administer:

- Dextrose per ICEMA Reference #7040 - Medication - Standard Orders.

- May repeat blood glucose level. Repeat Dextrose per ICEMA Reference #7040 - Medication - Standard Orders if indicated.

- Glucagon per ICEMA Reference #7040 - Medication - Standard Orders, if unable to start an IV.

IV. ALS INTERVENTIONS

- Perform activities identified in the BLS and LALS Interventions.

- Establish advanced airway as clinically indicated per ICEMA Reference #10190 - Procedure - Standard Orders for patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.

- Place on cardiac monitor if indicated.

- For tonic/clonic type seizure activity administer:

  - Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.

  - Assess and document response to therapy.

  - Base hospital may order additional medication dosages or a fluid bolus.

V. REFERENCES

Number	**Name**
7040	Medication - Standard Orders
10190	Procedure - Standard Orders

TRAUMA - ADULT
(15 years of age and older)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

In Inyo and Mono Counties, the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patent airway, protecting cervical spine.
- Obtain O_2 saturation (if BLS equipped).
- Administer oxygen and/or ventilate as needed.
- Keep patient warm.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: If the patient meet(s) any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

- Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

- Penetrating trauma without any NSAID indicators are not candidates for axial spinal immobilization.

NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Abdominal Trauma**: Cover eviscerated organs with saline dampened gauze. Do not attempt to replace organs into the abdominal cavity.

- **Amputations**: Control bleeding. Rinse amputated part gently with sterile irrigation saline to remove loose debris/gross contamination. Place amputated part in dry, sterile gauze and in a plastic bag surrounded by ice (if available). Prevent direct contact with ice. Document in the narrative who the amputated part was given to.

  Partial Amputation: Splint in anatomic position and elevate the extremity.

- **Bleeding**:

  - Apply direct pressure and/or pressure dressing.

  - To control life-threatening bleeding of a severely injured extremity, consider application of tourniquet when direct pressure or pressure dressing fails.

- **Chest Trauma**: If a wound is present, cover it with an occlusive dressing. If the patient's ventilations are being assisted, dress wound loosely, (do not seal). Continuously reevaluate patient for the development of tension pneumothorax.

- **Flail Chest**: Stabilize chest, observe for tension pneumothorax. Consider assisted ventilations.

- **Fractures**: Immobilize above and below the injury. Apply splint to injury in position found except:

- **Femur**: Apply traction splint if indicated.
- **Grossly angulated long bone with distal neurovascular compromise**: Apply gentle unidirectional traction to improve circulation.
- **Check and document distal pulse before and after positioning**.

- **Genital Injuries**: Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputations the same as extremity amputations.
- **Head and Neck Trauma**: Place brain injured patients in reverse Trendelenburg (elevate the head of the backboard 15 - 20 degrees), if the patient exhibits no signs of shock.
  - **Eye**: Whenever possible protect an injured eye with a rigid dressing, cup or eye shield. Do not attempt to replace a partially torn globe, stabilize it in place with sterile saline soaked gauze. Cover uninjured eye.
  - **Avulsed Tooth**: Collect teeth, place in moist, sterile saline gauze and place in a plastic bag.
- **Impaled Object**: Immobilize and leave in place. Remove object if it interferes with CPR, or if the object is impaled in the face, cheek or neck and is compromising ventilations.
- **Pregnancy**: Where axial spinal stabilization precaution is indicated, the board should be elevated at least 4 inches on the right side for those patients who have a large pregnant uterus, usually applies to pregnant females greater than or equal to~~>~~ 24 weeks of gestation.
- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.
- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- Advanced airway (as indicated).
  - Unmanageable Airway: Transport to the closest most appropriate receiving hospital when the patient requires advanced airway and an adequate airway cannot be maintained with a BVM device.

- Apply AED.
- Establish IV access (administer warm IV fluids when available).
  - *Unstable*: If BP is less than ~~<~~ 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: Maintain IV if BP is more than ~~>~~ 90 mm Hg and/or signs of adequate tissue perfusion.

Blunt Trauma:

- *Unstable*: Establish IV NS open until stable or 2000 ml maximum is infused.
- *Stable*: Maintain IV NS, TKO.

Penetrating Trauma:

- *Unstable*: Establish IV NS, administer 500 ml bolus one (1) time.
- *Stable*: Maintain IV NS, TKO.

Isolated Closed Head Injury:

- *Unstable:* Establish IV NS, administer 250 ml bolus. May repeat to a maximum of 500 ml.
- *Stable*: Maintain IV NS, TKO.

- Transport to appropriate hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

- Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

- Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization.

NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Fractures**:

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Establish IV NS, administer 250 ml bolus one (1) time.

- **Impaled Object**: Remove object upon trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the voice prompts.

B. **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

- *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma and no reported vital signs (palpable pulse and/or

spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.

  - If the patient is not responsive to trauma-oriented resuscitation, consider medical etiology and treat accordingly.

  - **Unsafe scene may warrant transport despite low potential for survival.**

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. ALS INTERVENTIONS

- Advanced Airway (as indicated):

  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then** transport to the closest receiving hospital and follow ICEMA Reference #8120 - Continuation of Care.

- Monitor ECG.

- Establish IV/IO access (administer warm IV fluids when available).

  - *Unstable:* If BP is less than ~~<~~ 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.

  - *Stable*: Maintain IV if BP is more than ~~>~~ 90 mm Hg and/or signs of adequate tissue perfusion.

- For Tranexamic Acid (TXA) administration for blunt or penetrating traumas meeting inclusion and exclusion criteria below:

Inclusion Criteria	**Exclusion Criteria**
Within three (3) hours of injury, the prehospital use of TXA should be considered for all blunt or penetrating trauma patients with signs and symptoms of hemorrhagic shock that meet **any** one (1) of the following inclusion criteria: • Systolic blood pressure of less than~~<~~ 90 mm Hg at any time during patient encounter. • Significant blood loss and a heart rate more than~~>~~ 120. • Bleeding not controlled by direct pressure or tourniquet.	• Any patient less than~~<~~ 15 years of age. • Any patient more than three (3) hours post-injury. • Penetrating cranial injury. • Traumatic brain injury with brain matter exposed. • Documented cervical cord injury with motor deficits.

Blunt Trauma:

➢ *Unstable*: Administer IV NS until stable or 2000 ml maximum is infused.

➢ For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

➢ *Stable*: Maintain IV NS, TKO.

Penetrating Trauma:

➢ *Unstable*: Administer IV NS 500 ml bolus one (1) time.

➢ For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

➢ *Stable*: Maintain IV NS, TKO.

Isolated Closed Head Injury:

➢ *Unstable*: Administer IV NS 250 ml bolus, may repeat to a maximum of 500 ml

➢ *Stable*: Maintain IV NS, TKO.

- Transport to appropriate hospital.

- Insert nasogastric/orogastric tube as indicated.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  Distracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

  - Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization.

  NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- ~~**Fractures**:~~

  - ~~**Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.~~

- **Pain Relief for Acute Traumatic Injuries**:
  - Administer an appropriate analgesic ~~Fentanyl~~ per ICEMA Reference #~~7040 - Medication - Standard Orders.~~11140 - Pain Management - Adult. Document vital signs and pain scales every five (5) minutes until arrival at destination.
  - Consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
  - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer IV NS 250 ml bolus one (1) time.

- **Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders.

- **Impaled Object**: Remove object upon trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Treat per ICEMA Reference #11070 - Cardiac Arrest - Adult.

B. **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

- *Severe Blunt Force Trauma Arrest*: If indicated, pronounce on scene.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" per ICEMA Reference #12010 - Determination of Death on Scene, contact the trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without trauma base hospital contact.

- **Precautions and Comments**:
  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.
  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.
  - **Unsafe scene may warrant transport despite low potential for survival.**
  - Whenever possible, consider minimal disturbance of a potential crime scene.
- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
8120	Continuation of Care
11070	Cardiac Arrest - Adult
11140	Pain Management - Adult
12010	Determination of Death on Scene

TRAUMA - PEDIATRIC
(Less than 15 years of age)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

Inyo and Mono Counties do not have trauma center designations and the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patient airway, protecting cervical spine.
- Oxygen and/or ventilate as needed, O_2 saturation (if BLS equipped).
- Keep patient warm and reassure.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: Using age appropriate assessments, if the patient meet(s) any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using spinal axial immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.
  - Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization using spine board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Abdominal Trauma**: Cover eviscerated organs with saline dampened gauze. Do not attempt to replace organs into the abdominal cavity.

- **Amputations**: Control bleeding. Rinse amputated part gently with sterile irrigation saline to remove loose debris/gross contamination. Place amputated part in dry, sterile gauze and in a plastic bag surrounded by ice (if available). Prevent direct contact with ice. Document in the narrative who the amputated part was given to.

  Partial amputation: Splint in anatomic position and elevate the extremity.

- **Blunt Chest Trauma**: If a wound is present, cover it with an occlusive dressing. If the patient's ventilations are being assisted, dress wound loosely, (do not seal). Continuously re-evaluate patient for the development of tension pneumothorax.

- **Flail Chest**: Stabilize chest, observe for tension pneumothorax. Consider assisted ventilations.

- **Fractures**: Immobilize above and below the injury. Apply splint to injury in position found except:

  - **Femur**: Apply traction splint if indicated.

  - **Grossly angulated long bone with distal neurovascular compromise**: Apply gentle unidirectional traction to improve circulation.

  - **Check and document distal pulse before and after positioning**.

- **Genital Injuries**: Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputations the same as extremity amputations.

- **Head and Neck Trauma**: Place brain injured patients in reverse Trendelenburg (elevate the head of the backboard 15 - 20 degrees), if the patient exhibits no signs of shock.

  - **Eye**: Whenever possible protect an injured eye with a rigid dressing, cup or eye shield. Do not attempt to replace a partially torn globe - stabilize it in place with sterile saline soaked gauze. Cover uninjured eye.

  - **Avulsed Tooth**: Collect teeth, place in moist, sterile saline gauze and place in a plastic bag.

- **Impaled Object**: Immobilize and leave in place. Remove object if it interferes with CPR, or if the object is impaled in the face, cheek or neck and is compromising ventilations.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- ~~Advanced airway (as indicated).~~

- Unmanageable Airway: Transport to the closest most appropriate receiving hospital when the patient requires an advance airway. An adequate airway cannot be maintained with a BVM device.

- Apply AED.

- IV Access (warm IV fluids when available).

  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV. May repeat once.

  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.

- Transport to appropriate hospital. Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closes trauma hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using spinal axial immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.

  - Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Administer IV NS 250 ml bolus one (1) time.

- **Impaled Object**: Remove object upon trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the instructions.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

  - *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

  - *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the Trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. ALS INTERVENTIONS

- Establish advanced airway as indicated per ICEMA Reference #10190 - Procedure - Standard Orders.~~Advanced airway (as indicated).~~

  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then**

transport to the closest receiving hospital and follow ICEMA Reference #8100 - Continuation of Trauma Care.

- Monitor ECG.
- IV/IO Access (Warm IV fluids when available).
  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV/IO, may repeat once.
  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.
- Transport to Trauma Center: Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closest trauma hospital.
- Insert nasogastric/orogastric tube as indicated

A. Manage Special Considerations

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using spinal axial immobilization on an awake, alert and cooperative patient, without the use of a rigid spine board.
  - Penetrating trauma without any NSAID indicators are not candidates for spinal immobilization using long board.

Axial Spinal Immobilization with use of a Rigid Spine Board: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Blunt Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured - e.g. dislocated shoulder, hip fracture or dislocation.

  - **Pain Relief**:
    - Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
    - For patients four (4) years old and older, consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
    - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer 20 ml/kg NS bolus IV/IO one time.

- **Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders for suspected head/brain injury.

- **Impaled Object**: Remove object upon Trauma base hospital physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Treat per ICEMA Reference #14040 - Cardiac Arrest - Pediatric.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

  - *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the Trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without Trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders
12010	Determination of Death on Scene
14040	Cardiac Arrest - Pediatric
15030	Trauma Triage Criteria and Destination Policy